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THE CARE OF CHILDREN IN HOSPITAL*

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The form of human institutions is predetermined as much by the age in which they are set as by the men who set them. Charles West founded the Hospital for Sick Children in Great Ormond Street in 1851. In this instance the age overcame the man. He was an obstetrician of the restless reforming type, as became the son of a nonconformist minister who was half pedagogue and half evangelist. Through his father's school, through an apprenticeship to a local apothecary, through St. Bartholomew's Hospital, and through several Continental universities he pursued a notable academic course with serious pertinacity. Afterwards he practised midwifery in London, with a reputation and success which made him Lumleian Lecturer, Harveian Orator, and Senior Censor of this College. Near the age of 40, which is the climacteric of the reformer, he turned his energies to propagating the study of disease in childhood in lectures, books, and pamphlets. He was obsessed by the appalling ignorance in this branch of medicine. That more than one-third of the children he delivered would die before the age of 12 seemed to weigh heavily on his mind. He conceived the idea, rightly or wrongly, that the quickest remedy was to open a children's hospital which, he said, "would afford the means of instruction to students, as well as furnishing opportunities for extending the boundaries of our knowledge concerning a class of disease frequent in their occurrence, dangerous in their character, and often very obscure in their symptoms." Against much opposition he succeeded in founding his hospital, in the famous house of the famous Richard Mead, and there he worked for twenty-three years. But, as Norman Moore said of him, "the conduct of other men so rarely satisfied him that he was not a happy colleague, and left both St. Bartholomew's and the Hospital for Sick Children in a state of feud with other members of the staff." His remaining years were spent, as is the way of such men, in brooding over medical education and in other discontents. So much for the man whose name we honour in these lectures.

The age he worked in needs little description. The mere mention of it raises pictures of self-confident men and women toiling earnestly in every field from poetry to politics. In many respects it was a great age, but it was an unfruitful time for this experiment of opening children's hospitals because the strongest interests were then flowing in other directions. In medicine they were towards sanitary reform. Elsewhere interests were centred on religious questions and on the self-discipline of character. In practical affairs the Puritan ethos was being harnessed to iron, coal, and railways in new industrial enterprises, in a prevailing atmosphere of excessively bad taste which permitted even the dons of Oxford and Cambridge to erect architectural monstrosities. That Charles West and his colleagues achieved so much in circumstances so adverse was praiseworthy. They worked under difficulties. Their hospitals bore the impress of these difficulties, and we are still affected by them.

The chief of the adverse circumstances which beset the founding of the early children's hospital was the established authority of the adult hospitals already in existence for more than a hundred years. It inevitably followed that children's hospitals were built and arranged like the older hospitals. They inherited the same oblong wards and cheerless corridors. They imitated their methods of staffing and of nursing. They pursued their methods of research. This was a misfortune, because the needs and arrangement of children's hospitals differed then, as they differ now, from those of other hospitals. We have not yet escaped the influence of these false conceptions.

Another adverse circumstance that made the eighteen-fifties an unfortunate period for the founding of children's hospitals was the prevailing sentimentality of the times. In this attitude of mind children's hospitals were regarded too much as refuge homes for slum children and too little as places for the scientific study of the diseases which might best be treated there and of the methods by which they might best be nursed. They suffered from an overdose of Shaftesbury and Dickens. The paramount need of the time, so far as it concerned the health of children, was a clear analysis of the facts about disease in childhood adduced by those methods of study which, from Sydenham to Thomas Lewis, have revealed so much about the diseases of adult life. Another handicap to the scientific study of children's diseases in hospitals was the dread of admitting children because of the danger of death from cross-infection. The early children's hospitals avoided this difficulty by refusing to admit children under the age of 2, which, although a justifiable procedure at that time, was an ostrich-like policy towards study of disease in early infancy. Therein lies a partial explanation of our comparative ignorance in this most difficult and least understood branch of medicine. Charles Cameron's remark still holds true: "There is no branch of medicine in which experience is more necessary and yet more difficult to come by."

A discussion of these problems is not an academically exciting subject for a lecturer. It is difficult to raise it above the level of a pedestrian guide, but I choose it for three reasons. The first is its practical importance at a time like this, when the planning of new children's hospitals is in the air and when their special needs may again be subordinated as they were a hundred years ago. The second reason is that the problems involved are particular and technical, and I wish to suggest that they cannot be

* The Charles West Lecture delivered at the Royal College of Physicians, London, on Nov. 19, 1946.

understood unless the facts are carefully analysed. The third reason is that during the past two years, as a member of the Curtis Committee, I have had the opportunity of examining many kinds of children's institutions, assessing their methods and comparing their results, and this experience has taught me that the care of children is as uneven in our hospitals as it is in other institutions—good in some and very bad in others, and where it is very bad the explanation lies usually in a failure to define personal responsibility, or in the imposition of a personal responsibility by a remote governing or administrative body on a staff who are unwilling to confess or complain about their difficulties.

Admission to Hospitals

The number of children's beds required in hospitals is influenced by many factors apart altogether from local variations in the incidence of disease. From my own observations I have estimated that in two children's hospitals or departments both doing the same kind of clinical work the number of beds required may vary by as much as 100%, according to the manner in which the hospital's work is carried out. A hospital with satisfactory working arrangements will deal with as many children in fifty beds as another hospital with unsatisfactory working arrangements will deal with in a hundred beds. The economics of these variations is important. Assuming that it costs £250 a year to maintain each hospital bed, which is now a modest estimate, the saving to the first hospital would be £12,500 a year, less the expenditure on the extra salaries and maintenance costs required to keep the work at a satisfactory level. If these extra costs to the first hospital be put as high as £5,000 a year it still enjoys a considerable saving. The crux of the matter is in the maintenance of satisfactory working arrangements. Therein lies true economy. I shall attempt to define these arrangements after I have examined what work is required of children's hospitals and departments.

A hospital's work is usually estimated in terms of its number of beds, its number of patients, and the average duration of their stay. The needs of a town or district are estimated by adding together these numbers from all the hospitals in the town or district. These somewhat colourless records do not take into account the variable local factors which govern hospital admissions or the standard of work within the hospitals.

We may arrive at a more precise estimate of the needs by studying figures collected by two of my colleagues, Dr. Mary Taylor and Dr. R. B. Thompson, who have recently made a detailed survey of all the Newcastle children who became patients within hospitals or nursing homes during the years 1943 and 1944. They undertook this research in order to find out which paediatric diseases throw the heaviest burden on the hospitals, by assessing their severity and determining their age incidence. Their detailed report will be published shortly, but I am allowed to quote some of the results which will illustrate my subject. During those two years there was little bombing in or around Newcastle, and the results can be taken as fairly representative of normal conditions. In order to assess the local variable factors and to provide comparison with results from other towns it needs to be explained that, apart from a shortage of beds in long-stay hospitals, the hospital accommodation for the city's own children was ample, and there were no waiting lists for children ; that the standard of staffing was fairly satisfactory ; that the citizens, considering their native caution, had a reasonable confidence in their hospitals that did not deter them from sending their children there. On the other hand, the threshold of admission was high because of a prevailing paediatric policy which required that, whenever possible, sick children be treated in their own homes and not in hospitals, and that admission for "observation" be discouraged. An exception to this policy was the ready admission of children with scarlet fever to the fever hospital, and the low threshold of admission of children for tonsillectomy.

The inquiry covered all children in the ages between birth and the end of the twelfth year. The hospitals and nursing homes drew patients from a wide area, but only those children from the city itself are included. It was estimated that within these ages there were resident in the city 49,800 children in 1943 and 50,400 in 1944. The error of computation in these figures is such that 50,000 can be taken as average for the two years and used as a basis for calculation. The total population living within the city in these two years was estimated at 260,000. Of the 50,000 children, 3,782 were admitted to hospitals and nursing homes in 1943, and 3,704 in 1944. This is an average annual admission of 3,743 (7.48% of the 50,000 children). Of these, 890 were admitted for tonsillectomy. Excluding the tonsillectomy cases 2,853 were admitted (5.7% of the 50,000 children). Had the age groups of 13 and 14 been included, the percentage of the city's children admitted to hospitals would have been slightly lower, as the admission incidence of the older age groups is lower than in the younger age groups.

Tables I, II, and III illustrate the nature of the circumstances under which these children were admitted to hospital.

TABLE I.—*Types of Hospitals Admitting 3,743 Children*

Children's hospitals and children's departments of general hospitals	2,163 patients
Fever hospitals	1,218 "
Children's wards in special hospitals	237 "
Children's sanatorium	30 "
Private nursing homes	95 "

TABLE II.—*Ages of Patients*

Age	No. of Patients	No. of Patients, Excluding Tonsillectomy
Under 1 year	419	418
1 year	256	252
2 years	345	312
3 "	338	249
4 "	354	235
5 "	372	261
6 "	365	237
7 "	310	197
8 "	249	166
9 "	227	163
10 "	188	136
11 "	176	127
12 "	144	100
Total	3,743	2,853

TABLE III.—*Admissions in Age Groups*

	Total	Under Age 1	Under Age 5
Admissions, including tonsillectomy	3,743	*419 (11·2%)	1,712 (45·7%)
Admissions, excluding tonsillectomy	2,853	418 (14·6%)	1,466 (51·4%)

* 107 of these were treated in infectious disease hospitals.

A perspective view of the various diseases for which children enter hospitals, and of the arrangements needed for their treatment, can be obtained only from a detailed analysis of many factors, including the age of the patients, the season of admission, and, in the case of trauma, the peak hours of the day when the accidents take place. I will quote only a few illustrative facts.

Table IV shows the chief categories of disease, excluding tonsillectomy patients. The distortion of statistics which comes from considering the records of one hospital only is revealed in the fact that, of 761 city children admitted to one children's hospital, 552 (72.5%) were patients sent

for tonsillectomy, while of 962 children admitted to another hospital only 63 (6.5%) were sent for that purpose.

TABLE IV.—*Chief Categories of Disease*

	No. of Patients	Remarks
Trauma	306	55 had serious burns and scalds, 77 fractures, and 56 head or other serious general injuries
Abscess, cellulitis, and skin sepsis	202	
Acute lung diseases	312	150 had pneumonia
Tuberculosis	129	3 had bone tuberculosis, and 26 tuberculous meningitis miliary tuberculosis
Emergency surgery	79	31 were under the age of 3, and 42 had appendicitis
"Planned surgery"	115	60 were treated for hernia, and 23 by orthopaedic operations
Specific infectious fevers	929	595 had scarlet fever and 190 diphtheria
Acute infective gastro-enteritis	122	
Dysentery	90	
Meningococcal meningitis	22	
Rheumatic heart disease	15	
Venereal disease	7	
Nephritis	11	
Coeliac disease	7	

The enumeration of patients and their diseases in Table IV reveals little of what goes on in children's hospitals. It gives no clue to the work of the staff or the arrangement of their duties. We may see the matter more clearly, however, if we examine their duties in three categories. The first is the *clinical responsibility* of doctors and nurses in the admission of each child, in its immediate diagnosis, and in its nursing care and treatment. The second is the *social responsibility*, for which I wish I could find a less tarnished phrase to describe duties which involve, amongst other cognate things, the explanation and advice given to parents at the various stages of their child's illness. The third is the *supervisory responsibility*, which devolves on one or more experienced members of the staff in controlling infections, in arranging and rearranging the right juxtaposition of patients on physical and psychological grounds, in adjusting the proportion of nurses to patients and patients to nurses, and in other duties which seem to be more important in children's hospitals than in those of adults. I shall attempt to illustrate these needs by examples, but we may get a clearer view of the picture if we attune ourselves to it by imagining in each case that the patient is our own child. I have yet to find that what is not good for our own children is likely to be good for other people's children—a useful rule of thumb in all matters concerning the care of children in hospitals.

A first example may show what is required in service and in time in the common event of a severely injured child being admitted to hospital. A severely burned child arrives in hospital within three or four hours of the accident. He will then be clad in emergency dressings and relatively comfortable. Except to those with training and experience in this branch of clinical paediatrics his condition at the time of admission will not reveal the series of sudden changes about to take place during the next twenty-four hours, each of which may need to be countered by decisive action. Within ten minutes of admission he should be seen by someone capable of assessing the injury and foreseeing the probable sequence of events. For about three hours afterwards the child will require the continuous attention of two doctors and a nurse, engaged in clinical studies of the patient's changing condition, in serial estimates of blood concentration, in intravenous plasma treatment, and in dressings under anaesthesia. For one or two days afterwards the child will require close examination at three-hourly intervals night and day to adjust the treatment to the needs of the moment. In the later stages considerable time will be spent in applying dressings under anaesthesia. Throughout all this activity the morale of the child, on which so much will depend in the later stages of the illness, will require purposeful attention and support. The time spent in this care and treatment may be estimated in medical and nursing "man hours." During the first day of his stay in hospital a burned child may require as much as ten "medical man-hours'" attention.

Other examples could be taken from children severely ill with infective enteritis or meningococcal meningitis, or peritonitis or soft-tissue injury, each of which may claim two or five medical man-hours immediately after admission to hospital. The urgency of these situations in paediatrics is due to the small margin of safety, by which delay for half an hour or a small error in treatment or nursing technique may kill the child. Only those who have worked under these conditions can appreciate the time, the concentration of effort, and the combination of clinical and laboratory skill required in the diagnosis and in the control of treatment in a busy children's department. It is easy to see how administrators, matrons, and medical men who lack that experience may fail to recognize the needs, and how dangerous it may be to leave the planning of children's hospitals in their hands. I do not wish to overpaint the picture, but from an experience spent equally in adults' and children's wards it seems to me that there is no branch of medicine which requires more time, more care, more promptitude, and more experience than clinical paediatrics in hospitals.

In addition to these clinical duties the staff must find time for what I have described as their social and supervisory responsibilities. The first of these can be recognized by estimating the time spent in contacts which must be made with parents when their child is brought to hospital or taken from it. What these contacts are can best be realized if we put ourselves in the position of the parents and then see how much courtesy and explanation we would expect from someone whose judgment we trusted. The *supervisory* responsibility of the medical staff is exemplified in the steps which might be taken on discovering that a child's recovery had been complicated by an intercurrent infection. An examination of all the arrangements of the ward, from kitchen to napkin bins, from nurses' hands to cleaners' cupboards, might be carried out before a solution of the problem was found. The ward round comprises constant supervisory responsibilities of this kind, which claim considerable time and patience in all children's departments.

Children's Wards

It is easy to slip into satire in describing a children's ward, but the following is not far off the mark in many of our hospitals.

The room is vast. It contains twenty beds, spaced along walls tiled by Doulton or painted chocolate and yellow. The roof is remote—too remote for the cleaner's brush, and terrifyingly remote to the eyes of a child who lies many hours gazing at it. Some of the beds are three feet from the ground, to the pleasure of physicians and surgeons with ageing backs, but to the discomfort of the child who has not slept so far from the ground before. Many of these beds are protected by bars set close enough to prevent a child from lodging his head between and high enough to prevent him falling overboard. The beds stink just a little. Near the bed is a contraption, half-chair and half-locker, but it is beyond the reach of the child except by a contortion he cannot make so soon after his operation. He defeats this by concealing his personal treasures under his pillow until they are again put out of his reach. He solaces himself with comics or with paper and a scrubby pencil which he cannot sharpen.

He dislikes the pallid immobile child in the next bed because he is too young for companionship and too ill for talk, but, as is the way of children, he makes the best of it, and carries

on a conversation with a boy of his own age ten yards away over the heads of a whimpering baby and a plaintive 2-year-old standing behind the bars of his cot clad in a shapeless night-gown with a loose napkin sunk to his ankles below. This young child's plaint is not difficult to interpret. He draws the attention of a nurse busy with noughts and crosses on a temperature chart. She acts quickly, and then goes to other duties in the kitchen, where she floats mashed potatoes on plates of liquid mince. The children await their dinner, but are distracted by strange events. A white-coated young man arrives and descends upon the silent occupant of a bed who, knowing that her penicillin hour is at hand, breaks her silence in a four-hourly scream. There are other distractions at other times—the daily or twice-weekly promenade of an older man in black with a retinue of followers; the occasional quick incursion of a younger man more sprucely clad, who pronounces his decision with a "put him on the list for next Tuesday," the solemn visit of the matron, who passes from bed to bed with the same question on her lips at every bed; the arrival of an injured child at night; the piece of chocolate after dinner; the excitement of strange instruments which the doctors and nurses use but do not explain. Night comes on, but there is no bedtime story, no last moment of intimacy, no friendly cuddle before sleep. The nurse is too busy for that, busy with the noughts and crosses. This daily rhythm of anxiety, wonder, apprehension, and sleep is better than it sounds, because it is made tolerable by the extraordinary resilience and gaiety of the children at every opportunity. Their cheerfulness keeps on breaking through. But it is a deceptive cheerfulness.

In the hospital there are other wards like this, with a kitchen, a side-room, a linen cupboard, and an entrance corridor beyond which parents shall not pass. They have no treatment room, no laboratory, no accommodation for parents, no interviewing room. Each ward is under one black-coated man of authority, who, although devoted to his work, must delegate much of it to a white-coated resident. He has little time for companionship with his colleagues except in committee-rooms. His ward is his domain. If he is a surgeon it is a surgical ward. If he is a physician it is a medical ward.

Not all hospitals are like this. Some are better, but many others are worse, mainly because most of the clinical work is in the hands of people untrained in paediatrics or in the hospital-care of children. But I have drawn this picture in order to make concrete suggestions for its improvement.

Suggested Improvements

1. The clinical unit should be big enough to carry a trained staff sufficient in numbers for its varied duties, and working closely enough for the cross-fertilization of each other's minds in daily contact over their patients. For this purpose the unit should contain not less than fifty and not more than a hundred beds, which will be subdivided into smaller nursing charges.

2. The unit should be constructed not as isolated medical and surgical wards but as a combined clinical unit carrying both medical and surgical patients, in which paediatric physicians, surgeons, and specialists combine in their clinical work. In this combined clinical unit the children are placed in rooms or wards on grounds of their age, their temperament, and the nature of their illness, not divided into "medical" or "surgical" cases according to their need for operations. I shall return to this theme and its many advantages to patients, to nurses, to residents, and to medical staff. Having worked under this arrangement for many years, I and my colleagues, who have had a full experience of it, are convinced of its absolute value.

3. The unit should be arranged in rooms of five to eight beds, with at least one two-bedded room where, for special clinical reasons or for a companionship which is psychologically necessary, two children may be lodged. In addition, single rooms will be required for 5–10% of the total number of patients.

4. In each unit, or conveniently near to each unit, there should be a suite of special rooms in which, when necessary, a mother may live with, nurse, and care for her own child. She will do this under supervision of the trained staff. Five or more rooms of this sort will be required in a unit of fifty beds.

5. In each unit there should be a small self-contained traumatic department into which the injured child may be immediately received and treated.

6. In each unit there should be a treatment room in which all dressings, lumbar punctures, and other painful manipulations can be carried out, and where anaesthesia will be frequently used, particularly for the painful removal of dressings.

7. Each unit should contain its own laboratories in which the clinical staff can work and carry out such immediate laboratory examinations as are within their province. One skill enhances another skill. The clinician who has undergone a laboratory discipline and who himself continues, so far as he can, to use precise laboratory methods in his wards is likely to be a more accurate observer and a closer student of disease than he otherwise would be.

8. Each whole-time worker in the unit, whether he be house-physician or senior member of the staff, should have in or near the unit "a room of his own," however small it may be.

Medical Staff

The care and treatment of children in hospital demands from the medical staff more time and more attention to detail than does the care of adults. Therefore the primary responsibility for the immediate clinical work in a children's unit should be placed fairly and squarely on the shoulders of one person. In my opinion this should be a resident paediatric physician who has been fully trained before taking up the post and who will hold it for two to four years. It is exacting work, and two to four years is long enough for that kind of responsibility. The resident paediatric physician will require the help of other residents, one of whom will be experienced enough to be his deputy. In a busy clinical unit of fifty beds there should be at least three residents. There should also be a senior paediatric physician and his deputy who visit regularly and who are readily available for consultation. They will be responsible for ultimate decisions, for the maintenance of standards in the nursing and treatment of the patients, and for the promotion of inquiries into all aspects of the clinical work, from the control of ward infections to the control of admissions. In a teaching hospital where there are associated consultation duties, at least one of the senior physicians should be a whole-time member of the staff. Other visiting physicians, surgeons, and specialists should be members of the staff and visit regularly or be called in consultation.

This method of staffing is designed for a combined clinical unit, the value of which I press, because it is in such a unit that surgeons and specialists can most confidently place their patients, in the knowledge that the post-operative progress will be constantly supervised. In teaching hospitals and departments there are other compelling arguments for the combined clinical unit. It brings together in close consultation physicians, surgeons, and specialists over the large number of patients whose diagnoses are in doubt. It has the reciprocal action of enlisting the interest both of physicians and of surgeons in new subjects for research. It solves the problem of where to place the "no-man's-land" diseases such as general injuries and staphylococcal septicaemia with osteitis. It gives to the residents a wholesome clinical experience in differential diagnosis and the after-care of patients. No paediatric physician can practise successfully unless he be an authority on the diagnosis of appendicitis. No children's surgeon can confidently advise operation without considerable skill in the differential diagnosis of acute medical diseases, or without a knowledge of the use and misuse of modern methods of resuscitation. They will best get this experience and skill in a combined clinical unit of not less than fifty beds.

This staffing of a children's clinical unit may sound extravagant. But is it so? Each town with a population of 250,000 will need a general children's hospital or department of 100 beds, an associated hospital for infectious disease of the same size, and a long-stay hospital of more than fifty beds. A town of that size will be spending not less than £500,000 a year on the public education of its children, and £40,000 or more a year on its child welfare services. Against these vast sums the amount which would be spent on paediatric physicians and surgeons is very small But it must not be *too* small. We must escape the poverty-stricken attitude of a hundred years ago which still encumbers us.

Nursing

In children's wards the patients and medical staff are in the hands of their nurses to a precarious extent. Rarely in an adult ward does a patient die from a fault in nursing, whereas in children's wards it happens too often too allow us any composure of mind. The fault is not always obvious, nor is it always in the nurses. More often it is in the hospital itself or in the staff, who impose upon the nurses tasks beyond their capacity. The Paediatric Committee of this College in their recent report have shown where some of the faults lie ; I need therefore say no more on that score, but leave it in the hope that the heavy hand of authority and precedent will be lifted by wise reform in nursing education. My purpose in discussing nursing is to draw attention to a more particular need, and one which is likely to increase in the future.

The most difficult and time-absorbing task in nursing is the care of the youngest children, who must be nursed, fed, and changed at frequent intervals of the night and day. If in addition there is much technical treatment the care of one infant becomes one woman's work. If there must be off-duty periods, it will be two women's work. If we introduce the three-shift system, it will be three women's work. While these infants are in hospital their mothers are at home suspended in anxiety. It would seem logical, therefore, that a solution of the problem should be found in admitting the mothers to the hospital to nurse their own children. This is no theoretical proposal. I have worked under this arrangement for many years, and I count it an indispensable part of nursing in a children's unit. Nor is it a revolutionary idea. By far the greater part of sick children's nursing is already done by mothers in their homes. Not all illnesses will be suited to this nursing, but the majority of all children under the age of 3 derive benefit from it. The mother lives in the same room with her child. She needs little or no off-duty time, because the sleep requirements of a mother fall near to zero when her own child is acutely ill. She feeds the child ; she tends the child ; she keeps it in its most comfortable posture, whether on its pillow or on her knee. The sister and nurse are at hand to help and to administer technical treatment to the child.

The advantages of the system are fourfold. It is an advantage to the child. It is an advantage to the mother, for to have undergone this experience and to have felt that she has been responsible for her own child's recovery establishes a relationship with her child and confidence in herself which bodes well for the future. It is an advantage to the nurses, who learn much by contact with the best of these women, not only about the handling of a child but about life itself. It is an advantage to the other children in the ward, for whose care more nursing time is liberated. In teaching hospitals it is of further advantage to the students, who gain a practical experience of the form of nursing they will depend on in their practices and learn to recognize the anxieties and courage which bind the mothers to their children during illness: a lesson which fosters the courtesy on which the practice of medicine depends. I advocate this method of nursing, not on sentimental grounds but on the practical grounds of efficiency and necessity. Apart from all other reasons the shortage of nurses will impose this method on us in the future.

Care of Children in Special Hospital

About a third of Newcastle's children admitted to hospitals enter the fever hospitals. In some towns the proportion is higher. A considerable number of these patients are infants and young children, suffering from illnesses other than the acute specific fevers. Apart from diphtheria, which may justify this specialization of a hospital, there appears to be little reason for the sharp division between the fever hospitals and the acute medical sections of the children's department. A family is stricken with streptococcal infection. One boy develops a quinsy and stays at home ; his brother has a sore throat with a rash and is sent to a fever hospital ; and his infant sister gets streptococcal septicaemia and meningitis and is admitted to a children's hospital. An infant with infective gastro-enteritis which yields a dysentery organism goes to a fever hospital ; another infant with gastro-enteritis which is equally infective but yields no dysentery bacillus remains in the children's hospital. Both types of hospital make their contribution to the care of children and the study of their diseases, but as time goes on each approximates to the other in its techniques and in the scope of its work. The corollary of this is that the staffing and nursing of both types of hospital should approximate also. The staffs of the fever hospitals should be trained as paediatricians and be specially instructed in the hospital care of children, and by contact with paediatric hospitals they should keep in touch with advances in the subject. On the other hand, the staffs of children's hospitals should know their fevers, and be *au fait* with all advances in their prevention and control.

So far I have been discussing institutions which are thoroughly familiar to us, institutions in which we live or work each day. If at times we tend to neglect the comfort and emotional welfare of the children in these institutions by leaving that responsibility to others, we are quickly brought back to reality by contact with questioning parents. I now pass on to another type of institution where the care of children is not so readily safeguarded. This is the long-stay hospital—the orthopaedic hospital, the children's sanatorium, and the like—where patients may remain for months or years, where the medical staff who dictate the length of stay may know little about the parents of the children, where the parents may never have the opportunity of discussing the effect of confinement on the future of the child with someone who has carefully considered that aspect of its welfare.

If Samuel Butler had extended his Erewhon to include this problem no doubt he would have said that a decision to restrain and confine a person for six months for a civil offence would be reached only after hours or days of careful consideration of the evidence by a judge and a number of other trained people, but that a child, on whom the effects of confinement are much greater than on an adult, could be committed to hospital for far longer periods with far less consideration of the evidence or the need. I have experimented in the domestic care and treatment of children with active abdominal tuberculosis, of children immobilized by orthopaedic appliances, of children with chronic disease which requires frequent observation and examination ; and from these experiments I am convinced that too often and too lightly is the decision made to confine children in

long-stay hospitals. Sometimes the primary diagnosis is at fault. A child with coeliac disease may lie for months in bed under the impression that he has tuberculosis. Sometimes the assessment is at fault. A child with rheumatic heart disease may lie for months when he would be better gently idling about in his own home and garden. The crux of the matter is the careful ascertainment, before the child is admitted, of the clinical problem, of parental attitude, of their domestic circumstances, and of the conditions of the hospital to which it is proposed to send the child. This ascertainment can be made only by people with considerable clinical experience and knowledge of society.

Some of the long-stay hospitals have attempted to set their house in order, with partial success. But a long-stay hospital can never be completely successful in providing the things of which the child is deprived, whatever the educational arrangements may be, or however many their books, toys, and cinemas. These may mitigate the deprivation, but do not give the sense of personal attachment, the relationship, the companionship, which are necessary exercises for the mind of the growing child. I have had to listen to a great deal of evidence from men and women who spent much of their childhood and adolescence in these institutions. The sensitive and intelligent witnesses recalled with nightmare memories the long hours of winter evenings which pressed upon them in their adolescence, the aimlessness of their existence, the uncertainty of their future. They had their lessons each day, and raffia work and entertainments, but there was no intimacy with anyone who could explain to them the purport of their illness or encourage them with plans for the future. The fault lies in the form and arrangement of most of these long-stay hospitals. They have been conceived too much as medical institutions and arranged too much as hospital wards. It would be better if the children lived in small groups under a house-mother, and from there went to their lessons in a school, to their treatment in a sick-bay, and to their entertainment in a central hall. There would be no disadvantage in the house-mother having had a nursing training, but that in itself is not the qualification for the work she will do. Her duty is to live with her group of children and attempt to provide the things of which they have been deprived.

I must consider one other type of hospital, which will bring me full circle to Charles West again. He left obstetrics to concern himself with children's hospitals. So it is not inappropriate that a children's physician should turn for a moment to maternity hospitals, for in these places one-third of the children of the country begin their lives.

So far I have been suggesting that many of the faults in our hospitals are due to poverty-stricken ideas, which took their origin a hundred years ago, and to a formal method of construction and staffing which precedent has laid upon them. This is as true of maternity hospitals as of others. Some are now escaping from poverty and are much gayer than they were, with coloured oilcloths, stainless steel, and plate glass, but there has been little reform of essentials.

What are these essentials? I take it that the function of a maternity hospital is to deliver a woman safely of her child, and afterwards to care for them in such a manner as to ensure their health, to establish their intimate and interdependent relationship, and to leave the woman free from the fears of having another child. Our maternity hospitals are ensuring the safe delivery of a woman to a greater and greater degree, but are they fulfilling the other two functions?

I know maternity hospitals which are the hygienist's dream of perfection. The women lie for their ten days in immaculate beds placed equidistantly along sterile walls. Their ward is a picture of calm repose and passive immobility. You ask what has happened to create this atmosphere of silence and subdued conversation and fail to get an answer; but the truth is that the mothers are mystified by an arrangement under which their babies have been taken away from them at the time when, at the end of nine months' waiting, they had expected to possess them. The babies are in cots set in rows in a room along the corridor beyond their earshot, out of sight but not out of mind. At regular intervals of the day they are placed on a trolley, wheeled along the corridor, and with the ringing of a bell which announces that milking-time is at hand, they are delivered by a masked woman to another masked woman at the door of the ward in which the mothers wait. Milking-time over, the babies are reembarked for their nursery where they are solaced with sugar and water.

This, surely, is physiologically wrong. I and many of my colleagues have the advantage of working in maternity hospitals where, throughout the puerperium night and day, mothers and babies are kept within reach of each other, where the mother may pick up her baby when she desires, where everything that is done for the child is done within sight of the mother at her bedside, and experience shows that with simple precautions not only is the danger of neonatal infection less than it otherwise would be, but breast-feeding and the relationship between mother and child are firmly and safely established in a physiologically natural manner.

Co-operation between obstetricians and paediatricians is now becoming close, but concerning this I have one piece of advice to offer. It is next to useless to enlist the services of a paediatrician in a maternity hospital only to visit occasionally and give advice on sickness. In a maternity hospital of any size there should be an experienced paediatric physician who lives there, or visits each day regularly and punctually. It is his or her duty to prevent and treat sickness in the children, and to apply a knowledge of human biology on which the relationship between mother and child is founded. The paediatric physician will have his own technique of ward rounds, of control of infections, of treatment of disease, all of which demand a special knowledge. In smaller hospitals which cannot find such an experienced person for their staff, at least one of the obstetric officers should have a training in this branch of clinical work and human biology which fits them to supervise that aspect of child-care.

Conclusion

Although I may have failed to make it clear, the tenor of my discourse has been that the care of patients in hospitals is a subject which demands scientific study, and experience based on such study, and that the need for this is greatest of all in children's hospitals. A children's hospital is an instrument of medical treatment. It is a highly specialized instrument, and its arrangement must be constantly altered and adapted to meet changing needs. It is also a dangerous instrument in the hands of those who do not know how to use it.

These difficulties and dangers should be exposed in constant inquiry and discussion, and corrected by research. For this purpose some members of the profession, themselves experienced in the work of children's hospitals, must make themselves expert in the physical examination of institutions. No amount of administrative or clinical experience alone will fit them for that work.

CHANGES IN HAEMOGLOBIN CONCENTRATION IN THE ACUTE STAGE OF LOBAR PNEUMONIA

BY

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The frequent occurrence of delayed resolution in lobar pneumonia treated with sulphonamides has emphasized the need for the investigation of factors which might lead to further elucidation of the process of resolution. Ross (1945) demonstrated that those patients who subsequently developed delayed resolution had, on admission to hospital, a lower concentration of plasma protein than those whose consolidation resolved within the normal time. Although it seemed possible that such low plasma proteins might be due to a dietetic deficiency in protein, she also suggested that the onset of pneumonia might itself cause a fall in the plasma protein content. It seemed reasonable to argue that, if a loss of plasma protein were initiated by the disease process, the presence of "oligaemic shock," with accompanying haemoconcentration, might be a factor in the severe case of pneumonia and might retard the process of resolution. It was therefore decided to repeat Ross's experiment, with the addition of a careful study of the course of the haemoglobin concentration.

Methods

The investigation was carried out concurrently with, and upon the same subjects as, an experiment comparing the respective therapeutic effect of sulphonamides and penicillin on the course of lobar pneumonia (Anderson and Ferguson, 1945). The patients were men of 35 years or more. They received either sulphonamide or penicillin therapy. Already it has been recorded that the results of treatment were similar. Further, as a careful comparison of the haemoglobin changes in the two groups showed no difference between them, they have been regarded for the purposes of the present investigation as a single series.

Heparinized venous blood, withdrawn from a superficial vein without stasis, was used for all haemoglobin and plasma protein estimations. Plasma protein concentrations were estimated only on the blood sample obtained upon the patient's admission to hospital. The estimations were made by the refractometric method.

A photo-electric absorptiometer of the "Spekker" type was used to estimate haemoglobin concentration. Haemoglobin was converted to oxyhaemoglobin by blowing an accurately measured 0.1 ml. of heparinized blood into 10 ml. of a 0.4% solution of ammonia in distilled water. The readings obtained on the "Spekker" were converted to absolute values by means of a graph. This graph had been obtained previously by plotting serial dilutions of a blood of known oxygen capacity against their corresponding logarithmic values.

Each patient's haemoglobin concentration was estimated on admission and, if possible, for the four succeeding days. Thereafter, unless clinical findings indicated that more frequent investigation might be of interest, haemoglobin estimations were repeated only at weekly intervals. The majority of estimations were duplicated, and a difference greater than 0.2 g. was considered to be inaccurate.

Results of Investigation

(*a*) *Admission Plasma Protein Concentration.*—The admission plasma protein concentrations were estimated on 84 patients whose recovery was uncomplicated either by empyema or by sterile effusion. These cases were divided into two groups:

Group A contained those patients in whom, by the 28th day of illness, there remained no clinical or radiological evidence of a pneumonic consolidation. Such patients were considered to have shown "normal resolution."

Group B contained all those patients in whom the pneumonic consolidation persisted beyond 28 days. Such patients were considered to have "delayed resolution."

The percentage frequency distribution of the plasma protein concentration in these two groups is shown in Fig. 1 and Table I. It is apparent that the majority of Group B

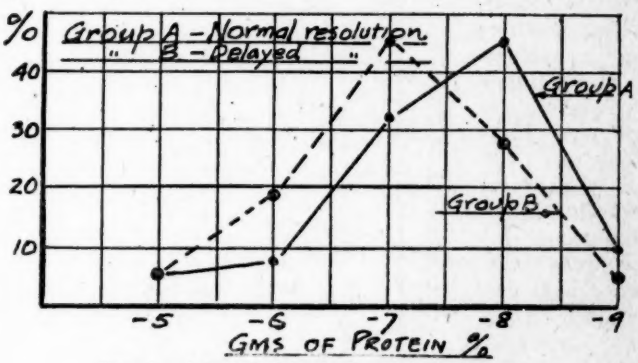

FIG. 1.—Admission total plasma protein level.

TABLE I.—*Admission Total Plasma Protein Level (Actual Figures)*

	Protein Level in G. %					Total No. of Cases
	4·1–5	5·1–6	6·1–7	7·1–8	8·1–9	
Cases resolving in 28 days	2 5%	3 7·5%	13 32·5%	18 45%	4 10%	40 100%
Cases resolving after 28 days	2 4·5%	8 18·2%	20 45·5%	12 27·3%	2 4·5%	44 100%

cases on admission to hospital have a lower concentration of plasma proteins than have Group A cases, for in 55% of Group A cases a plasma protein concentration of between 7.1 and 9.0 g. % was obtained, whereas only 31.8% of Group B cases attained this level. These figures confirm Ross's observation except that in the present series the differences are less marked. It may be noted that Ross's cases included all male patients from 20 years of age upwards, whereas the present series contains only patients over 35 years. Since this selection concentrates attention on the age group in which the disease is most severe it would be natural for the difference to be less obvious.

(*b*) *Admission Haemoglobin Concentration.*—The distribution of admission haemoglobin concentration in all

TABLE II.—*Correlation Between Admission, Haemoglobin Concentration, Duration of Illness, and Subsequent Time of Resolution*

	Hb Concentration (G. %)						% of Cases showing		Total No. of Cases
	19–17	17–15	15–13	13–11	11–9	Aver.	Normal Resol.	Delayed Resol.	
All cases on admission	1	15	53	38	4	13·48			111
Cases admitted on 1st to 3rd day of illness	1	7	35	18	1	13·65	61·4	38·6	62
Cases admitted on 4th day of illness and over	—	8	18	20	3	13·26	33·3	66·7	49
Cases with Grade I consolidation	—	6	10	7	—	13·91	86	14	23
Cases with Grade II consolidation	1	5	22	17	—	13·56	41	59	45
Cases with Grade III consolidation	—	3	18	14	4	13·03	15	85	39

patients was grouped according to the duration of illness and density of consolidation. The frequency of delayed resolution in each group was also recorded (Table II). Study of this table suggests that cases admitted early in their illness tend to have an average admission haemoglobin concentration slightly higher than those admitted late and that delayed resolution is rather more common in the latter group. In an attempt to obtain some standard which might reflect the haemoglobin level before admission, nine healthy male relatives of the same age group were selected, since, living under the same conditions as the patients, they might be expected to show a similar blood picture. The average haemoglobin concentration of these controls was 14.98 g. %, a level within normal limits, and one which is in accord with that reported by Marshall (1946)—14.6 g. per cent. for male blood donors of this age group in Glasgow. A comparison of this figure with the average admission haemoglobin in pneumonic patients reveals that the latter is 1.5 g. lower than the control figure. These figures suggested that the haemoglobin concentration was lowered by the onset of pneumonia and that as the duration of the illness increased the level might be further reduced.

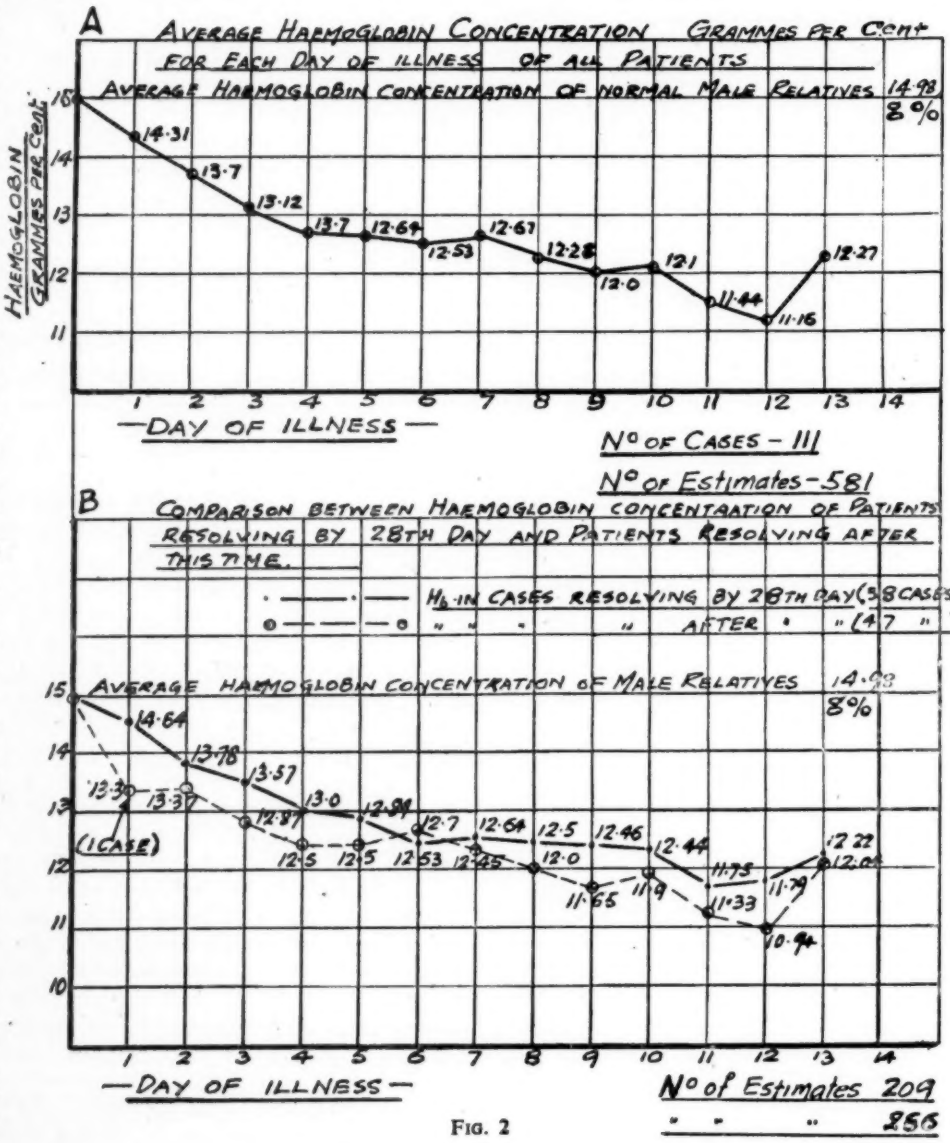

FIG. 2

It seemed possible that the effect of a longer duration of the disease might be to increase the extent of consolidation. If such were the case, then a correlation between the haemoglobin level present on admission to hospital and the density of consolidation as assessed from a radiograph might be expected. To test this, three arbitrary grades of radiographic density were chosen. These were defined as follows:

Grade I Consolidation.—Those cases in which the lung markings could be seen clearly through the consolidation were allocated to this section.

Grade II Consolidation.—Into this group were placed cases in which the lung markings could still be discerned through the consolidation, but much less clearly than in Grade I.

Grade III Consolidation.—Into this group were placed those in which the consolidation was so dense that no lung markings were apparent.

When a comparison is made of the admission haemoglobin values in these three groups (Table II) we find a slight trend downwards in the haemoglobin concentration as the density of the consolidation increases. As one might expect, there is a direct correlation between the density of the original consolidation and the speed of resolution. This is shown very clearly in that 85% of those patients with the densest consolidation (Grade III) developed delayed resolution, whereas among those patients with the least dense consolidation (Grade I) only 14% showed this abnormality. Of more importance, however, the findings give no support to Ross's contention that "shock" might account for the low plasma protein levels in pneumonia, since the consequent haemoconcentration which should be present was not found.

Mean Daily Haemoglobin Levels during Course of Pneumonia

Since it appeared that haemoglobin concentration might be affected by the duration of illness prior to admission to hospital the mean haemoglobin levels for each day of illness were calculated. The results of this analysis are depicted in Fig. 2, A. It is evident that in pneumonia, during the first 12 days of illness there is a progressive fall in haemoglobin concentration which follows a steady curvilinear course. Further, a tentative suggestion may be made that, as the original haemoglobin concentration of the pneumonic patient was probably similar to that of his male relatives, a fall in haemoglobin value had already occurred before his admission to hospital.

When a comparison of the average daily haemoglobin values was made between patients whose consolidation resolved normally and those in whom resolution was delayed, the graphs shown in Fig. 2, B were obtained. It can be seen that the curve for those patients who developed

delayed resolution shows a tendency to follow a rather lower level than that found in patients whose consolidation resolved within a normal period. It was now becoming manifest that haemoconcentration was not normally found in cases of pneumonia. Indeed, the haemoglobin value appeared to fall progressively below normal limits during the fastigium of the disease; this fall was most marked in cases which subsequently developed delayed resolution.

Discussion

The initiation of the pneumonic process must occasion a loss of plasma into the affected lung. It seems reasonable to assume that this depletion will be proportionate to the volume of lung affected. Loss of protein from the plasma would naturally cause a mechanical haemodilution, although in a normal healthy subject one would expect such a change to be transitory and a rapid return of plasma protein and haemoglobin to normal levels to occur within two or three days. Yet in pneumonia the haemoglobin concentration continued to fall.

Such a rapid fall in haemoglobin concentration does not seem to be in keeping with the onset of a simple hypochromic anaemia produced by a sudden cessation of iron absorption. A continuous loss of blood by haemolysis might easily produce such a result, but examination of the blood of six patients during the first five days showed no evidence of reticulocytosis. It seemed most likely, therefore, that the fall in haemoglobin concentration was caused by haemodilution, and, indeed, Rutstein and his co-workers (1945) have shown that in the acute stage of lobar pneumonia an increase does occur in both the plasma volume and the volume of the extracellular fluid.

Seaman and Ponder (1943) obtained rather similar findings in post-operative cases and showed that after operation the fall in haemoglobin concentration was greater than could be expected from the volume of blood lost. Findings so similar in two entirely different conditions might suggest that, in each, the phenomenon may be a response to injury. It may be that the injury to tissue, no matter what the assaulting mechanism be, produces a depression of the haemopoietic system.

Madden and Whipple (1940) express the view that the liver produces all albumin and much of the globulin required by the body, and observe that there is some evidence to show that, in dogs, infection can limit protein formation. If the haemopoietic system were thus depressed the liver might not only be unable to restore the plasma protein lost initially into the lung, but also might be inadequate in replacing the normal physiological daily loss. A similar continuous decrease in the number of circulating erythrocytes might also result. Such a loss of plasma protein might be expected to produce a fall in osmotic pressure and a resulting decrease in plasma volume, with marked peripheral failure. Yet in pneumonia there is an increase in plasma volume.

It is interesting that in nephrosis, despite a very low plasma protein concentration, a normal or almost normal plasma volume is found. Warren, Merrill, and Stead (1943) have suggested that the presence of an increased extracellular fluid volume may be the mechanism whereby the plasma volume is maintained in this disease. In experiments on dogs these workers have demonstrated that when the extracellular fluid was increased by continuous infusion until oedema occurred a normal plasma volume could be maintained despite a continuous loss of plasma protein.

It seems possible that, in pneumonia, retention of orally administered fluid produces a similar phenomenon and that the extravascular fluid and plasma volume remain increased until such time as the factor which inhibits the production of new plasma protein and fresh erythrocytes is overcome.

These findings might be linked with the lowered blood chloride levels and chloride retention found in pneumonic patients. If an excessive quantity of vascular and extravascular fluid were present then it would not be surprising that a concurrent retention of chlorides should occur and that, despite this, the chloride concentration in the blood should be low.

It would thus appear that low plasma protein and low haemoglobin levels found in pneumonia are not in themselves causative factors in delaying the speed of resolution, but that these findings indicate an extensive and dense consolidation which is itself a prime factor in the speed with which resolution is concluded. There would seem to be need for further study of the biological changes to which the onset of an infective process gives rise.

Summary

The haemoglobin concentration of patients suffering from pneumonia was studied by repeated examination over a period covering the acute stage of the disease. There was no evidence of haemoconcentration. The haemoglobin concentration fell progressively during the first 12 days in hospital. It is suggested that this reflects a haemodilution found most markedly in the severe case.

The presence of low plasma protein concentration and low haemoglobin in cases of pneumonia does not cause delayed resolution, but merely parallels the density of the consolidation, which is itself important in deciding the time of resolution.

I wish to thank Dr. Thomas Anderson for much helpful advice and criticism.

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ORDER OF ST. JOHN OF JERUSALEM

The *London Gazette* has announced the following promotions in, and appointments to, the Venerable Order of the Hospital of St. John of Jerusalem:

As Knights: Major-Gen. Sir R. B. Ainsworth, C.B., O.B.E., D.S.O., K.H.P., Surg. Vice-Admiral H. St. C. Colson, C.B.E., Air Marshal Sir Andrew Grant, K.B.E., C.B., K.H.S., Dr. E. Llewellyn. *As Commanders (Brothers):* Major-Gen. P. H. Mitchiner, C.B., C.B.E., T.D., Col. A. R. S. Vickers, Drs. R. B. MacGregor, C.M.G., F. W. M. Palmer. *As Associate Commander (Brother):* Major S. A. Paymaster, I.M.S. *As Commander (Sister):* Dr. Frances C. B. MacKay. *As Officers (Brothers):* Brigs. C. Scales, M.C., D. G. Cheyne, C.B.E., M.C., Col. R. I. Poston, T.D., late R.A.M.C., Cols. C. G. L. van Dyk, G. G. L. Stening, Lieut.-Col. J. C. John, O.B.E., I.M.S., Lieut.-Col. C. M. Forbes (since deceased), Major J. H. Plumridge, R.A.M.C., Drs. R. Nelson, J. C. R. Buchanan, R. D. Jones, R. J. Walker, J. J. Mangion, M. C. Lavin, H. B. Pare, Chau Wai Cheung, Tseung Fat In. *As Associate Officers (Brothers):* Drs. S. J. Hoffman, P. K. Chatterjee. *As Serving Brothers:* Drs. J. W. Sandoe, J. Orr, J. R. B. Dearden, E. E. Parrett, J. A. G. Wilson, R. B. Radcliffe, I. Davies, I. H. Davies, I. H. Lloyd, T. W. Wylie, N. C. Joel, A. J. J. O'Sullivan, H. H. Goodman, W. L. Walker, R. B. Eadie, J. Craw, J. Morris, H. A. Robertson, A. D. D. Broughton, K. M. Rodger, A. C. Ternes, L. S. Woods, E. R. Beech, B. W. Buttsworth, L. D. Hodby, A. N. Jacobs, R. B. Knight, H. H. R. Nash. *As Associate Serving Brothers:* Drs. K. Budeiri, E. Galgut, G. C. Roi, R. K. Bhandari. *As Serving Sisters:* Drs. Winifred M. Cole, Isobel C. Allardyce, Roberta H. M. Jull.

FOOD UTENSIL BACTERIOLOGY

BY

R. IRENE HUTCHINSON, M.B., D.P.H., D.T.M.

Public Health Laboratory Service

Modern conditions compel many people to have meals in communal feeding-places, and much work has been done on outbreaks of enteritis following the consumption of meals contaminated by infected "food-handlers." Not so much attention has been given to the possibility of transfer of similar and other infections by food utensils.

To ascertain the general hygienic condition of the "messing equipment" in daily use by the public a survey was made in 25 kitchens. These included A.A. and R.A.C. approved hotels, restaurants of multiple stores, works and school canteens, day nursery kitchens, teashops, snack-bars, and a civic restaurant. Visits were made between 12.30 and 1.30 p.m., so that conditions were observed at the peak hour when they were at their worst. The visits were not pre-announced, so that no special cleaning could be done. The kitchens were situated in a residential area of about 60,000 inhabitants—a London dormitory town where the food inspection was maintained at a very high level.

Samples of washing-up water in actual use were taken and swabs of spoons, cups, forks, glasses, and plates which had been used, washed, and were stacked ready for re-circulation. The swabs were moistened in nutrient broth, and for cups an area of 2 sq. in. (12.9 sq. cm.) to the left of the handle was rubbed over on the assumption that this area was most likely to contain organisms. For glasses the rims and inner and outer surfaces to a depth of 1/2 in. (1.25 cm.) were covered, and for forks the free ends of the prongs for a depth of 1 in. (2.5 cm.).

Organisms Isolated from Utensils

Spoons.—Out of 164 examined, 8 grew a coagulase-positive *Staphylococcus aureus*, 2 a Group B haemolytic streptococcus, 1 a *Bact. dysenteriae sonnei*, 1 a paracolon bacillus, 2 *Bact. faecalis alkaligenes*, and 27 yielded coliform bacilli.

Cups.—Out of 121 examined 9 grew a coagulase-positive *Staph. aureus*, four haemolytic streptococci (2 Group C, 1 Group B, and 1 Group G), 2 paracolon bacilli, 2 *Bact. faecalis alkaligenes*, and 30 yielded coliform bacilli.

Forks.—Out of 219 examined 8 yielded a coagulase-positive *Staph. aureus*, 2 haemolytic streptococci (1 Group A, 1 Group G), 2 paracolon bacilli; 1 *Bact. faecalis alkaligenes*, 1 *Proteus* bacilli, and 43 yielded coliform bacilli.

Plates.—Out of 53 examined 6 grew a coagulase-positive *Staph. aureus*, 2 haemolytic streptococci (1 Group B and 1 Group G), 2 *Bact. faecalis alkaligenes*, 1 *Proteus* bacilli, 3 *Pseudomonas pyocyanea*, and 23 yielded coliform bacilli.

Glasses.—Out of 58 examined 3 grew a coagulase-positive *Staph. aureus*, 4 haemolytic streptococci (2 Group B and 2 Group G), 1 *Bact. faecalis alkaligenes*, 1 Morgan's bacilli, and 10 yielded coliform bacilli.

All these organisms except the coliform bacilli are possible pathogens and have been cited as causes of disease. The widespread occurrence of coliform bacilli would suggest a real possibility of contamination by intestinal pathogens. No attempt was made to classify these coliform bacilli, as high counts of the dish-washing waters grown at 37° C. suggested that the majority were of animal origin. Faecal streptococci, *Streptococcus viridans*, and *Staph. albus* were also grown from 588 of the utensils examined, only 27 yielded no growth of any kind. These organisms, although not pathogenic in themselves, are an indication of the degree of possibility of infection from mouth and bowel organisms.

Dish-washing Waters

Thirty-eight samples of dish-washing water were examined; 19 had counts of more than 1,000,000 organisms per ml. at 37° C. and 9 had counts of more than 1,000,000 organisms per ml. at 22° C. Twenty of the 38 had considerably more organisms growing at 37° C. than at 22° C.—the approximate proportion being 120 : 1—suggesting the presence of a much higher number of organisms of animal than of soil or dust origin. As the average crude sewage in this country contains approximately 1,000,000 to 5,000,000 organisms per ml. at 37° C. (Topley and Wilson, 1946), it is seen that the majority of the dishes are being washed in water that bacteriologically is equivalent to sewage.

Twenty-three of the 38 waters had more than 1,800 coliform bacilli present per 100 ml. The Ministry of Health standard for a potable water varies according to the origin, but is ideally no coliform bacilli in 100 ml., and waters are "satisfactory" only if they have not more than 2 coliform organisms per 100 ml. Hence, these waters used for washing utensils, most of which are to be placed in the mouth, would appear to be entirely unfit for such a purpose.

Owing to the difficulty of obtaining soaps and soda 11 of the 38 waters contained no detergent. In others soda had been generally added, but in varying proportions—a handful or so being thrown in at random. That the addition of soda is of value is shown by the following:

With *p*H range 7–10 67% waters had bacterial counts greater than 1,000,000 organisms per ml.

Over *p*H 10 only 35% waters had bacterial counts greater than 1,000,000 organisms per ml.

With *p*H range 7–10 67% waters had coliform bacilli greater than 1,800 per 100 ml.

Over *p*H 10 only 47% waters had coliform bacilli greater than 1,800 per 100 ml.

The temperatures of the waters were found to be exceptionally low: the average was 40° C.—the maximum being 50° C. and the minimum 30° C. These temperatures would of course be too low to have any destructive or inhibitory effect on any organisms.

Among the organisms isolated from these waters were *Streptococcus viridans*, faecal streptococci, *Staph. albus* and *aureus* (coagulase-positive), coliform bacilli, paracolon bacilli (8 times), *Bact. faecalis alkaligenes* (12 times), *Proteus* bacilli (once), *Pseudomonas pyocyanea* (8 times), and aerobic sporing bacilli (14 times).

Drying Cloths

In most cases, owing to the shortage of towels and the impossibility of a quick laundry service, cloths were used till wet, and then dried and re-used. Many were washed at night and sent to the laundry weekly. Seventeen of the 36 examined yielded only faecal streptococci, *Staph. albus*, *Str. viridans*, and aerobic sporing bacilli. From the others one or more of the following were grown: coliform bacilli, paracolon bacilli, coagulase-positive *Staph. aureus*, and *Bact. faecalis alkaligenes*. On the whole the cloths did not seem too unsatisfactory.

The cleanest utensils came from a multiple store where a washing machine, with soda, was used and where there was no hand-drying of cups, plates, and glasses. These were placed in a drying oven with a temperature of

approximately 82° C., their length of stay varying from a few minutes to half an hour according to the demand for them. This temperature was high enough to kill many of the more delicate organisms, and indeed 10 out of the 20 swabs were sterile. This compares very favourably with the other 24 kitchens, where only 17 sterile results were obtained from among 595 swabs.

Though this investigation was not concerned with the bacteriological examination of the "food-handlers" in the kitchens, advantage was taken of the visit to inspect the sanitary arrangements and washing facilities provided for them. In most cases these were unsatisfactory. In 14 places no washing facilities were available either within or immediately adjacent to the sanitary convenience, and hands had to be washed, if indeed they were washed at all, in the same kitchen sink as the crockery and cutlery. This provides a sure path of infection by intestinal pathogens.

Conclusion

It would seem from this brief survey that in communal feeding-centres the cleaning of eating utensils is very unsatisfactory, and that pathogenic organisms are likely to be spread among the users of different articles. The lack of modern equipment such as washing machines, the difficulty of obtaining soap and washing powders, and the scarcity of drying towels renders very difficult the important and necessary task of feeding people in a hygienic manner. The finding of dysentery bacilli on the cutlery in one out of only 25 kitchens is rather disquieting, and may suggest the origin of the sporadic case of "diarrhoea"; and the finding of pathogenic streptococci 14 times and of pathogenic staphylococci 36 times may help to explain the high incidence of septic mouth lesions so common in the last few years. The prevalent method of washing and drying infected crockery and cutlery appears to do little in the way of destroying their pathogens.

Very great interest was shown by the proprietors of the premises visited, and every help was given to facilitate the investigation. Results were keenly awaited, and they were eager to know what measures could be adopted to remedy defects. It would seem that public health propaganda for improvement in kitchen hygiene, together with suggestions as to the methods to be followed, would be welcomed, especially if accompanied by bacteriological evidence showing its necessity.

My grateful thanks are due to the Medical Officer of Health for approval and permission to work in his district; to the Chief Sanitary Inspector, without whose co-operation and active help this work could not have been done; and to my technicians, Mr. P. G. R. Browne, Mrs. R. Udall, and Mr. H. Gillies, for much willing help in the preparation of media.

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For the 1946–7 academic year 248 graduates and others of like status from overseas have been awarded British Council scholarships, which enable them to take a wide range of postgraduate courses of study in this country. The scholarships are normally for one year, but extensions are granted in suitable cases. In addition the British Council has helped to place many students who have come under the auspices of overseas authorities or privately. The Council during the year established a students' welfare department to deal with the reception and non-academic welfare of scholarship holders, and to help them to gain a general knowledge of British life and institutions. To this end vacation courses, which enable those residing in London to visit the provinces and vice versa, as well as term-time talks, discussions, shows of documentary films, and other events are arranged. These facilities are available also to students sponsored by the Colonial Office, the Indian and Sudan Governments, and to other overseas students. The year's British Council scholarship holders have come from some fifty Empire and foreign countries, and include 36 taking medical subjects.

THE SURGICAL TREATMENT OF CHRONIC FRONTAL SINUSITIS

BY

V. E. NEGUS, M.S.

In my experience few complaints produce so much disability or suffering as chronic infection of the frontal sinus. In a great number of instances this suffering appears to be unnecessary, and I am therefore impelled to record my suggestions as to how unsatisfactory results may be avoided.

In the first place it is necessary not to exaggerate the incidence of frontal sinusitis, and to avoid operating under a mistaken diagnosis. The prominent symptom of frontal headache is attributable in many instances to neuralgia of various types or to migraine, but with no cause in the frontal sinus. The incidence of sinus headaches may, according to Proetz (1943), be no more than 5%; but when there is such a cause the case is difficult to cure. It is not my intention to enter into a discussion on the differential diagnosis of frontal headaches, but rather to suggest means of relief when the cause has been established.

Two Important Points

First, it is necessary to eliminate all contributory factors in the nasal fossae; this advice may seem obvious, but in a large number of unsuccessful cases referred to me this elementary detail has been overlooked. The treatment referred to is the care of infection in the maxillary and ethmoidal cells, the straightening of a high deviation of the septum, and the removal of an enlarged and obstructing middle turbinal body. Several patients I have seen have been submitted to more than one external operation, while the septum has been so twisted as to make the nasal fossa on the affected side quite inadequate for ventilation and drainage.

The second recommendation concerns direct treatment of the infected frontal sinus after all preliminary measures have been taken to provide a satisfactory outlet to the fronto-nasal duct, as outlined above. I do not believe that internal operations on the frontal sinus are satisfactory; evidence is afforded by a number of patients so treated who have subsequently come under my care and have required an external operation for their cure.

The most skilled operator in this region that I have seen was Dr. Max Halle, of Berlin, but even though I admired his dexterity in creating a free passage into the frontal sinus, the difficulty of clearing all infected ethmoidal cells by the intranasal route, together with the tendency of the exposed bony canal to reclose, has prejudiced me against this and other similar methods.

One comes, therefore, to the final determination that in cases with chronic infection of the frontal sinus associated with the usual symptoms of headache, difficulty in concentration, depression, and so on, the correct treatment is an operation by the external route. It remains then to decide what method is desirable.

Method

Attempts at obliteration of the frontal sinus are, in my experience, usually unnecessary, generally disfiguring, and often ineffective. I have had to operate on several patients who had elsewhere been submitted to attempted obliteration of the sinus. The anatomical structure is such that unless a new and permanently enlarged fronto-nasal duct is created an inefficiently drained recess will be left in the lower part of the sinus, with continual suppuration and the continuance of the symptoms which the operation is intended to relieve.

If an adequate fronto-nasal duct is provided the frontal sinus is in the great majority of cases able to return to a normal state, provided the lining mucosa has not been disturbed. In four cases I have had to remove the anterior wall of a shallow sinus to obliterate outlying recesses. In these the mucosa failed to recover after reconstruction of the fronto-nasal duct; but such cases are rare, and even with them it is essential to provide a free communication between the remains of the sinus and the nasal fossa, so that the first operation is not wasted. In this connexion it is interesting to note that in five cases in which previously unsuccessful attempts at obliteration had been made I have secured a good result by establishing an adequate fronto-nasal duct while at the same time reconstructing the frontal sinus by means of a saccular skin-graft. Not only has suppuration been eliminated thereby, with cure of the previous symptoms, but a good cosmetic result has been attained by restoring the contour of the forehead.

Reviewing the records of over a hundred patients on whom I have operated, the conclusion has been arrived at that a cure can usually be obtained by re-establishing ventilation and drainage of the sinus, the lining being undisturbed and allowed to return to normal. I do not believe that curettage of the cavity is necessary or desirable. I have, in various instances, found pockets of infection in such cases and have had to reoperate, sometimes replacing the denuded lining of the sinus by the insertion of skin, as referred to above. A considerable number of the patients I have dealt with had had one or more previous operations on the frontal sinus, and one young man had undergone, according to his own account, a total of seventeen.

Leaving, therefore, the anterior wall and the lining of the sinus, one has to decide on the route to adopt. I am of the opinion that a short incision, curving round the inner margin of the orbit, well away from the inner canthus, gives the best approach. A clear view is provided for clearance of any remaining infected or obstructing ethmoidal cells; there is no danger of damage to the trochlea or lacrimal sac if the orbital periosteum is carefully detached. The base of the skull is visible and safety is attained in enlarging the opening between the sinus and the fossa. It is unnecessary to remove more than a small portion of the floor of the sinus, but it is essential to take away a considerable part of the nasal process of the maxilla, as advocated by Howarth. Approach by an incision lower down seems to me to be inconvenient and to make permanent restoration of the fronto-nasal duct difficult or impossible. The operation described above allows of the gentle removal of exuberant hyperplastic mucosa when necessary, but curettage is carefully avoided. Examination of the posterior wall of the sinus for possible caries is, in my opinion, unnecessary, for the reason that even if present it is better left alone, in the certainty of ultimate recovery. This applies, naturally, to the usual chronic case and not to those isolated instances where an extradural or a frontal-lobe abscess is suspected. In not one of over a hundred cases have I had reason to regret leaving the posterior wall and its covering mucosa intact.

Finally, one comes to the means of maintaining the integrity of the fronto-nasal duct; this is readily attained by insertion of a skin-graft, applied to the raw orbital periosteum and to the exposed margins of the bone at the entrance of the frontal sinus. The graft is tucked into position after the insertion of a large tube of rubber or plastic material; it is not wrapped round the tube, since no graft is required over the nasal septum or posterior wall of the frontal sinus. Details of the operation are given elsewhere (StClair, Thomson, and Negus, 1937). In ten days the tube is removed, and no subsequent dilatation or passage of sounds should be necessary, as the new duct maintains its patency and provides adequate ventilation and drainage.

Conclusion

The operation requires care and meticulous attention to detail, but in the hands of my colleagues and myself it has proved most satisfactory in curing the symptoms without disfigurement. It is advisable, however, again to emphasize the signs and symptoms that require an external operation. Unilateral frontal headache, worse in the morning, either repeated daily over a prolonged period or recurring in acute or subacute attacks; clinical and radiological evidence of infection in the frontal sinus; evidence that maxillary sinusitis has been adequately treated and that freedom to the nasal orifice of the frontal sinus in the nasal fossa has been attained: these are the factors that indicate blockage of the fronto-nasal duct, either permanent or recurrent, and these are the reasons for which the external operation should be performed.

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A SIMPLE METHOD OF ESTIMATING PENICILLIN AND OTHER BACTERIOSTATICS

BY

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The methods in current use for the estimation of penicillin have been reviewed by Garrod and Heatley (1944). They include titration in broth, inhibition zones on solid media, turbidiometric methods, and the inhibition of haemolysis by a β-haemolytic streptococcus. Most of these methods require comparatively large volumes of test fluid, or are not easily applied in a routine clinical laboratory where many estimations of body fluids may be needed.

The method presented here utilizes the fermentation of glucose in a serum–water medium, with acid production and subsequent clotting of the serum as an indicator of growth. It combines the advantages of using small amounts of test fluids, easily available materials, a clear-cut end-point, with few manipulations and sufficient accuracy for all clinical purposes.

Technique

The glucose–serum medium (see below) is inoculated with 10 c.mm. of a 24-hour broth culture of the Oxford strain of staphylococcus per ml. of medium, and well mixed. Several 25-c.mm. volumes of the seeded medium are placed in a row on the paraffin-waxed surface of a glass slide. An equal volume of the serum or other fluid to be estimated for penicillin content is mixed with the first 25-c.mm. volume of medium on the slide, and serial dilutions are then made along the row by transferring 25 c.mm. of the mixture to the next volume, and so on. The last volume is left unmixed, as a control. The 25-c.mm. mixtures and the control are then taken up into capillary tubes, the ends sealed in a flame, and the tubes incubated overnight. This gives 1:2, 1:4, 1:8, etc., dilutions of the fluid under test and will correspond as end-points to 0.04, 0.08, 0.16, etc., unit of penicillin per ml. in the original fluid.

It will be found an advantage to use a Pasteur pipette graduated in four or five 25-c.mm. divisions. This is the only special piece of apparatus required, and may be used for all manipulations.

The capillary tubes should be about 1 mm. bore, to give a fluid column 2 to 3 cm. long. Too long a column reduces the rate of growth in its middle section.

Test Organism.—Any organism which is penicillin-sensitive, which will grow readily in fluid serum media and ferment

glucose, is suitable. In routine work the Oxford strain of staphylococcus serves very well, and has the advantage that the reading is made direct in units per ml. Where it is required to estimate accurately penicillin concentrations of less than 0.04 unit per ml., a more sensitive strain of staphylococcus or streptococcus must be used. The 10-c.mm. inoculum per ml. of medium, recommended above, has been found to produce the clearest results, but the same end-point is given by a very wide range of inocula.

Medium.—This has the following composition:

Sterile horse serum, 1 part; distilled water, 3 parts; glucose to give 1% solution; Andrade's indicator to give 1% solution. Tube into sterile containers and sterilize in steamer for 30 minutes.

It is, in fact, the standard His's serum-water medium used in testing fermentation reactions, and is supplied in the L.C.C. Pathological Service in 2- to 3-ml. volumes in screw-capped bijou bottles, which are both convenient and economical and widely available to many laboratories. The medium should be quite clear after sterilization. Some batches become turbid and should be rejected. This turbidity is apparently caused by heating a too acid medium, and is avoided by adjusting the serum to *p*H 8 before use (Mackie and McCartney, 1945). Here again the end-point is the same over a wide range of serum concentrations. 1:2 and 1:4 dilutions of the medium given above produce similar results. It is difficult in any serial dilution technique to secure exactly the same medium and inoculum in each dilution under test without elaborating a method too complicated for routine use. The use of a 25% serum medium as diluent has the advantage of approximating to these conditions in estimations of blood-serum levels.

End-point of Titration.—Where full growth of the staphylococcus has occurred the column of fluid in the capillary tube shows opaque clotted serum, coloured uniformly pink by the indicator; where no growth has occurred the fluid retains its original transparency. The end-point is sensitive enough to justify the use of concentrations intermediate to those obtained in a single serial dilution, by utilizing two or three series starting with, say, 1:2, 1:3, and 1:5 dilutions of the fluid under test. The Table shows the results of titrating saline or serum containing 1 unit of penicillin per ml. against the Oxford staphylococcus.

Table Showing Results of Titrating Saline or Serum Containing 1 unit Penicillin per ml. Against Oxford Staphylococcus H.

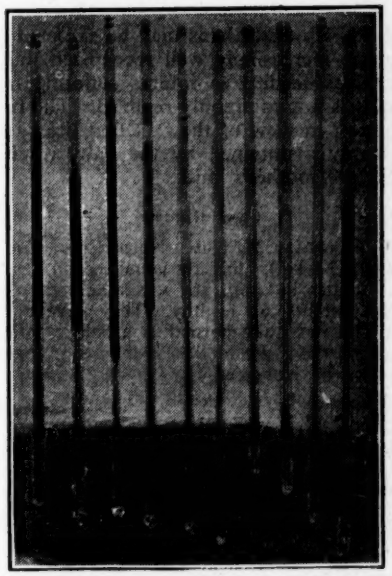
Dil.	Result	Dil.	Result	Dil.	Result	Dil.	Result
1 : 2	−	1 : 3	−	1 : 5	−	1 : 7	−
1 : 4	−	1 : 6	−	1 : 10	−	1 : 14	−
1 : 8	−	1 : 12	−	1 : 20	−	1 : 28	−
1 : 16	−	1 : 24	−	1 : 40	−	1 : 56	±
1 : 32	−	1 : 48	±	1 : 80	+	1 : 112	+
1 : 64	+	1 : 96	+	1 : 160	+	1 : 224	+
1 : 128	+	1 : 192	+	1 : 320	+	1 : 448	+

− = no acid, no clot. ± = acid only. + = acid and clot.

In routine work a single series is generally used, and here the end-point is quite sharp. One capillary-tube dilution contains clear fluid and the next completely clotted pink serum. The table shows that the dilution half-way between these tubes contains a single inhibition dose—that is, 0.02 unit of penicillin per ml. Sometimes a single tube shows acid production only without clot formation, and this is then taken as the end-point. The table indicates the range of error in this assumption. It compares well with other serial dilution methods; the illustration shows such a titration. Occasionally one tube is found to be clear while the next is acid, with the beginning of clot formation, showing as a turbidity. In this case the end-point is nearer by one-third to the second of these tubes than to the first.

Comment

The above method has been used for the estimation of unknown penicillin solutions, blood serum, cerebrospinal fluid, and urines with consistent results. Although it is described as a micro-estimation, using the dilution technique of Fleming (1944), similar results are obtained with larger quantities of materials in test-tubes. In the case of blood-serum titrations, haemolysis does not seriously interfere with the readings. Where test fluids are somewhat contaminated—for example, urines—care must be taken to read the end-point correctly. A penicillin-insensitive contaminant may give an isolated colony in the fluid column.



Titration of a blood serum. Right-hand tube showing acid and clot is a control. From right to left, serum dilutions are 1:2, 1:4, 1:8, etc. The fourth tube from the left shows acid without clot, indicating a blood-serum level of 1,28 units of penicillin per ml.

surrounded by a small zone of acid and perhaps clot formation. Very little convection occurs in capillary tubes, and the effect is not distributed throughout the column.

The method may be adapted for comparing the sensitivities to penicillin of organisms which satisfy the cultural requirements given above—for example, streptococci, staphylococci, Klebs-Loeffler bacilli. The fermentable carbohydrate may of course be changed to suit the organism.

While the above description has mentioned penicillin alone, this method may be used in work with other antibacterial substances—for example, tellurite, sulphonamides, etc.

Summary

A method for the estimation of penicillin in body fluids, suitable for the clinical laboratory, is described in which the fermentation of a carbohydrate in a serum-water medium is used as the indicator of growth.

This work was started at the Emergency Public Health Laboratory, St. Mary's Hospital, W.2, and I wish to express my thanks to Sir Alexander Fleming for the interest he has taken in it, and to Dr. A. B. Rosher for his helpful criticism.

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R.A.F. personnel admitted to hospital for in-patient treatment on final leave with (*a*) disabilities attributable to or aggravated by service or (*b*) psychotic disabilities may be retained on Service pay or given an allowance *in lieu* for a specified period. A Ministry of Health circular therefore requests hospitals to send names and particulars of personnel admitted on final leave as follows.—(*a*) R.A.F. Officers: to Air Ministry (A.R.4), Adastral House, Kingsway, W.C.2. (*b*) W.A.A.F. Officers: to Air Ministry (S.II(C)), Adastral House, Kingsway, W.C.2. (*c*) Members of Princess Mary's R.A.F. Nursing Service: to Air Ministry (N.S.B.), Awdry House, Kingsway, W.C.2. (*d*) Invalided airmen and airwomen: to Air Officer-in-Charge of Records (B.4.M.), Ruislip, Middlesex. (*e*) Released airmen and airwomen: to Air Officer-in-Charge of Records (K.I.), Gloucester.

Medical Memoranda

Persistent Anaemia in a Breast-fed Infant with Erythroblastosis Foetalis

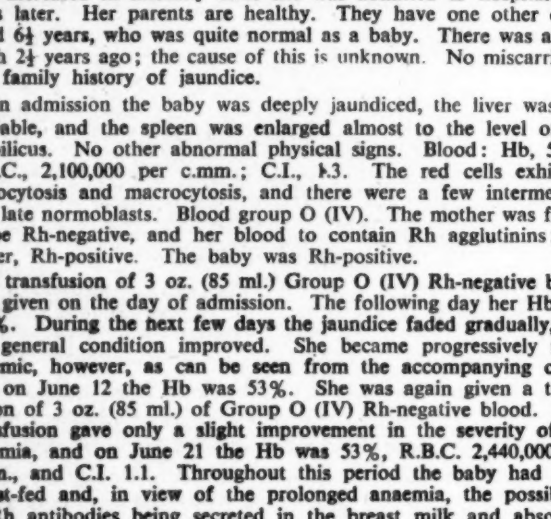
The fact that anti-Rh agglutinins may be excreted in the breast milk is becoming increasingly well recognized, but the danger of continued breast-feeding to infants suffering from erythroblastosis foetalis is not commonly realized. The following case may be of interest in view of the fact that the haemolytic process was probably maintained by the baby receiving anti-Rh agglutinins via the mother's milk.

CASE REPORT

Female child, born May 24, 1946. Normal pregnancy and labour. Birth weight 8 lb. (3.6 kg.). Slightly jaundiced on day of birth, and this increased in intensity until she was admitted to hospital four days later. Her parents are healthy. They have one other child, aged 6½ years, who was quite normal as a baby. There was a stillbirth 2½ years ago; the cause of this is unknown. No miscarriages. No family history of jaundice.

On admission the baby was deeply jaundiced, the liver was just palpable, and the spleen was enlarged almost to the level of the umbilicus. No other abnormal physical signs. Blood: Hb, 57%; R.B.C., 2,100,000 per c.mm.; C.I., 1.3. The red cells exhibited anisocytosis and macrocytosis, and there were a few intermediate and late normoblasts. Blood group O (IV). The mother was found to be Rh-negative, and her blood to contain Rh agglutinins; the father, Rh-positive. The baby was Rh-positive.

A transfusion of 3 oz. (85 ml.) Group O (IV) Rh-negative blood was given on the day of admission. The following day her Hb was 105%. During the next few days the jaundice faded gradually, and her general condition improved. She became progressively more anaemic, however, as can be seen from the accompanying chart, and on June 12 the Hb was 53%. She was again given a transfusion of 3 oz. (85 ml.) of Group O (IV) Rh-negative blood. This transfusion gave only a slight improvement in the severity of the anaemia, and on June 21 the Hb was 53%, R.B.C. 2,440,000 per c.mm., and C.I. 1.1. Throughout this period the baby had been breast-fed and, in view of the prolonged anaemia, the possibility of Rh antibodies being secreted in the breast milk and absorbed by the baby was considered. An examination of the mother's milk showed it to contain weak anti-Rh agglutinins. Breast-feeding



was therefore discontinued on June 24 and artificial feeds substituted. An examination of the blood two days later showed that the Hb had fallen to 38%, and a further transfusion of 6 oz. (170 ml.) Group O (IV) Rh-negative blood was given. Three days later the Hb was 77% and since this date the Hb level has been maintained between 66% and 75%, with a corresponding rise in R.B.C. Throughout the period of treatment the baby has received one hog's stomach plastule twice daily.

COMMENT

It is a well-recognized fact that Rh antibodies may be secreted in the colostrum, and a case in which such antibodies were found in the milk up to the fourteenth day was described by Langley and Stratton in 1944. In this case weak anti-Rh agglutinins were demonstrated in the breast milk on the thirty-first day. Throughout the time that the baby was breast-fed the haemolytic process continued. There was a further fall in the haemoglobin level for a few days after breast-feeding had been discontinued, probably due to the fact that antibodies absorbed from the milk remained active for a short period after artificial feeding had been started. The child responded well to a further transfusion, and has maintained a good haemoglobin level ever since.

My thanks are due to Dr. Charles Pinckney and to Col. Owen Pritchard medical superintendent of this hospital, for permission to publish this case

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Association of Erythema Multiforme with Herpes Simplex

Urbach (1933) was the first to draw attention to erythema multiforme occurring seven to ten days after an attack of herpes simplex. Forman and Whitwell (1934) were apparently unaware of Urbach's work when they reported 12 cases of erythema multiforme associated with herpes simplex. These authors tabulated the clinical similarities between the two conditions. Both are liable to recur, particularly in spring and autumn; both are provoked by infections, especially the common cold; and both may be caused by food sensitivity, by sunlight, and by menstruation. Urbach (1937) reported a further 20 cases, and described some experimental work supporting his hypothesis that an allergic mechanism is involved. Anderson (1945) reported 10 cases, and claimed satisfactory results from treatment by scarifying vaccination with smallpox vaccine four or five times at intervals of two weeks—a procedure previously found effective in some 80% of cases of herpes simplex. Six of his cases of erythema multiforme were treated by this method; four of these remained free from recurrences for from two to five years after one or two courses of vaccination, while another showed a reduction in the severity and frequency of attacks. It is of interest that in one successful case there was no history of recent herpes, but the patient had suffered from it some years previously. A new case, which demonstrates clearly the association of the two conditions, is recorded here.

An aircraftman aged 20 had suffered from "cold sores" since the age of 10, the attacks occurring most frequently in the spring and autumn. In 1944 he had his first attack of erythema multiforme. His second attack occurred about six months later. Since then he has had recurrences of varying severity every two or three months. He was first seen on Aug. 21, 1946. On examination herpetic scars were discovered round the mouth, and the hands and forearms presented lesions of erythema multiforme of iris type. He said that this attack was an unusually mild one. A full blood count was within normal limits. Clinical and radiological investigations revealed no dental or nasopharyngeal infection. He is certain that every attack occurs about ten days after an attack of herpes. He has in fact come to recognize the herpes as a warning signal of a probable attack of erythema multiforme. He never has erythema multiforme without the herpes, but occasionally a mild attack of herpes is followed some ten days later by a sensation of warmth and generalized skin irritation, lasting about one day, without the development of skin lesions. He is being treated by multiple vaccination.

I would like to thank Wing-Cmdr. H. E. Bellringer for the interest he has taken in this case and for the assistance he has given me.

ARTHUR ROOK, M.B., B.Ch.
Late Squadron-Ldr., R.A.F.V.R.

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A Cancer Board for the counties of Lancashire, Westmoreland, Derbyshire, and Cheshire, but excluding Liverpool and Warrington, has been set up under the Cancer Act, 1939, to arrange facilities for diagnosis and treatment of cancer in the working area of the Christie Hospital and the Holt Radium Institute. The Board will bear the cost of maintaining and treating patients.

Reviews

BUCHANAN'S ANATOMY

Buchanan's Manual of Anatomy. Edited by F. Wood Jones, M.Sc., F.R.S., F.R.C.S., assisted by E. L. Patterson, M.D., S. Mottershead, M.D., F.R.C.S., T. E. Barlow, M.D., F. R. Wilde, F.R.C.S., and Jessie Dobson, M.Sc., B.A. Seventh edition. (Pp. 1616; 847 figures, 48 plates. 45s.) London: Baillière, Tindall and Cox. 1946.

The seventh edition of *Buchanan's Anatomy* is edited by Prof. F. Wood Jones, with the assistance of five former colleagues in the University of Manchester. Very considerable changes have been introduced and some deletions made, but its original character of a book on topographical or regional anatomy has been retained. The first edition appeared in 1906, and at once became popular not only in the Scottish universities but elsewhere in Great Britain. In 1925 a fifth edition was brought out in London by Professors E. Barclay Smith, J. E. Frazer, F. G. Parsons, and W. Wright, which was characterized by the introduction of a section on general embryology, with descriptions of later development in the human subject of special organs, which were inserted in appropriate places throughout the book. These included much of Prof. Frazer's original work, supplemented by illuminating references to comparative anatomy and morphology.

From the present edition—probably owing to post-war restrictions and the desirability of limiting the size of the book—certain omissions had to be made; the introductory section on embryology and the use of colours to distinguish origins and insertions of muscles, arteries, veins, and nerves, and afferent from efferent nerve tracts, have been abandoned; and it was thought best to replace the original description of general embryology and some of the later stages of development of individual organs by an introductory section dealing with general growth and development. This section, undertaken by Prof. Wood Jones, contains valuable personal observations and schematic illustrations by himself of developmental changes which occur in late foetal life and those periods of postnatal development which he defines as the phases of infancy, neonatal stage, early and late childhood, puberty, adolescence, and young and full adult life. Like all Wood Jones's previously published works it bears the stamp of a keen appreciation of the interrelationship of cause and effect, and in the present instance he also clearly demonstrates the need of preparation during development for future requirements—e.g., adaptations in the structure of the skull and of the respiratory and circulatory systems for the important events of childbirth: independent respiration and the ability of the new-born infant to obtain nourishment by sucking, along with the powers of digestion, absorption, and excretion. Two important features in this edition are the inclusion of 48 excellent and well-chosen *x*-ray plates, and the biographical notes of anatomists whose names have been associated with anatomical parts. Moreover, the glossary, which was a useful feature of previous editions, has been retained.

There are a few minor defects in the book which might be rectified in future editions: (1) Paginal cross-references are desirable in a book on regional anatomy in which certain parts or organs are necessarily described in more than one section of the book. (2) More references to applied anatomy would greatly increase the interest and general usefulness of the work. (3) Fuller descriptions are needed, with good illustrations, of the microscopic anatomy of such organs as the salivary glands, pancreas, and suprarenal and genital glands, (4) In the glossary derivations and definitions are in a few instances too short or are misleading—e.g., "thymus, G. Thyme." The Greek word θύμος has more than one meaning: besides (*a*) thyme, the plant, it was employed to denote (*b*) the soul or spirit and (*c*) the glandular substance in the chest of young animals ("sweet bread" of Galen). The book as a whole, however, is remarkably free from errors, and the new matter which has been introduced, including recent work on the articulations and C.N.S., supplemented by numerous explanatory illustrations by the editor, and the beautiful series of new plates, will ensure its continued popularity.

RESEARCHES ON COLOUR VISION

Researches on Normal and Defective Colour Vision. By W. D. Wright, D.Sc. (Pp 383; 233 illustrations. 36s.) London: Henry Kimpton. 1946.

A book written by a specialist is almost always a valuable addition to the literature of the subject. This is certainly the case with the work on colour vision now under review; clearly written, with good diagrams, it is a book which can be strongly recommended. So that other prospective readers may judge for themselves, a brief survey of the contents of the book may now be given: Chapters I and II: The physiology of vision, and visual perception. Chapters III and IV: The colorimeter and its modification for different purposes. Chapters V to VII: The determination of the luminosity curve for the fovea and parafovea. Chapters VIII to XII: The results of mixing red, green, and blue monochromatic colours. Chapters XIII to XVII: The discrimination of the eye for differences of hue. Chapters XVIII to XXIII: The effects of adaptation, both to white light and to several coloured lights. Chapters XXIV to XXIX: The measurement of colour vision in colour-defective persons. Chapter XXX: The interpretation of colour vision phenomena in terms of the fundamental response curves.

As indicated above, the reviewer is already finding the book an extremely useful one, because there are ready to hand many papers written by the author to which one wants to refer, and which, but for this book, would mean going to a library, with a considerable consumption of time. It is to be hoped, now that the war is over, that publishers will find it possible to produce many more books like this.

A STUDY OF MALNUTRITION

Etude des troubles causés par la dénutrition dans un asile d'aliénés. By Maurice Bachet. (Pp. 269. No price given.) Paris: Librairie Louis Arnette.

At the present time, when attempts are being made to maintain that human beings can subsist without serious damage on diets far below the minima that have been accepted in the past, studies of the effects of carefully measured diets on health are particularly valuable. Dr. Bachet's book gives the results of combined investigations made at an asylum, la Maison Nationale de Charenton, and at the Institut de Recherches d'Hygiène (Section Parisienne). The patients at the asylum had been well fed up to July, 1940; from that time bread was reduced to 300 g. per day, meat to 20–30 g., and visible fats to 5–7 g. The death rate rose after March, 1941; diarrhoea became frequent; deaths from tuberculosis mounted from 4 to 43 per year; by the end of March, 1942, some 100 cases of nutritional oedema had been detected. The amounts of nutrients supplied per day by the diet were measured on five occasions between April and December, 1941: calories and fats were at their lowest (1,436 and 22.57 g.) in April, 1941; animal protein fell to 10.9 g. in December, 1941. On the other four occasions calories were over 1,700 and animal protein was over 15.9 g. per day. Some factors, particularly the frequency of intestinal infections, make patients in asylums an easier prey than normal people to the effects of such scanty food; but on the other hand they were less hard-worked and were better warmed than were the general population.

The author made a special study of the relation of nutritional oedema to the concentration of albumin in the serum. As a general rule, when the albumin was below 3.5 g. per 100 ml. oedema was extensive; oedema occurred when the concentration was higher, but it was moderate, or slight and localized; when supplementary food led to decrease of oedema the albumin rose. When oedema got worse the albumin almost always fell. But in some cases oedema disappeared when the patients were put on a salt-free diet, without any rise of the serum protein. Oedema, even if only moderate, did occur without reduction of serum albumin and might persist after the serum albumin had risen to normal. Reduction of the serum albumin appears to be the chief, but not the only, factor that causes oedema. It has been claimed that nutritional oedema, as seen on the Continent during the war, was cured by treatment with large doses of vitamin B_1, but Dr. Bachet found that doses of as much as 75 mg. per day had no effect. Supplements of foodstuffs that supplied about 600

calories per day caused a slow improvement; the oedema disappeared in from 6 to 10 weeks.

Some of the patients developed a pellagrous dermatitis, and diarrhoea was extremely common. Doses of nicotinamide cured most cases of diarrhoea but had no effect on the dermatitis. The amount of nicotinic acid in the diet (15.9 mg. per day) was not low; the appearance of signs of pellagra on such a diet is interesting in view of the new theories of the relation of pellagra to inadequacy of protein in the diet. The authors consider less fully the other manifestations of pellagra, the course of tuberculosis, and the terminal stage and morbid anatomy of malnutrition.

PRACTICAL ANAESTHETICS

A Short Handbook of Practical Anaesthetics. By Hoël Parry-Price, M.R.C.S., L.R.C.P., D.A. (Pp. 127; illustrated. 12s. 6d.) Bristol: John Wright and Sons. 1946.

The author of this chatty little book is obviously an anaesthetist of experience. He writes not as an instructor but as a friend, telling the reader in a confidential maner such things as the secrets of successful technique and how to avoid the innocent-looking pitfalls which all too often cost a patient his life. The friendly communion between author and reader is effected by a pleasant, easy style of writing which will make the book acceptable for armchair reading after a busy day

Rightly, in a small volume of this sort, Dr. Parry-Price has not confined himself to a formal framework of subject matter, but has rather let his thoughts wander; he includes topics not often found in books on anaesthesia. There is one chapter, perhaps a little ambitious for any but the keenest nurse, entitled "Instructions on Anaesthetics for the Nursing Staff"; another discusses the variations between Service and civilian anaesthetics. In such a small and inevitably dogmatic book there is bound to be much that will not meet with general approval, but the reader will be indulgent in face of the author's pleasant literary manner and the publisher's praiseworthy production.

RECREATIONAL ACTIVITY

Recreation and the Total Personality. By S. R. Slavson. (Pp. 205. $3.00.) New York: Association Press, 347, Madison Avenue, N.Y.17.

The trend of the machine age is to increase leisure. With the increase of scientific achievement less and less manpower is required to produce the consumer goods necessary or convenient to civilized man. Unless there is to be wholesale unemployment each man must work shorter hours—and how is he to fill his spare time? Leisure activities must fulfil a felt want or compulsion in the individual, but must also conform to the rules and dictates of society. By his recreation man must fulfil or find an outlet for instincts and impulses not otherwise satisfied, and he must so far as possible train himself in skills which will be useful to himself and to the community. Recreation to be effective must be fitted to the age, intelligence, and social status of the leisured person. To this end there should be some intelligent planning of recreation, not so much with the idea of forcing any individual to adopt this or that recreational activity as to provide facilities so that every individual may have the opportunity to choose the amusement, game, or hobby which appeals to him. Planning of this kind is a more serious matter in America than it is in this country, and the present volume is a textbook for the planners of recreation. Clubs, recreational centres, and kindred organizations take themselves very seriously in the United States, and those concerned will find in this book how they may apply the lessons of physiology and social democracy and especially of mental hygiene in their programmes. To some it may appear that a great business is being made of play, but the reader will find here many fruitful suggestions and much sound advice not only for those who arrange for others to play but for the players themselves.

The Church Missionary Society has issued from 6, Salisbury Square, London, E.C.4, at the price of 1s. 6d., a pamphlet entitled *Dynamics of Mercy*. This is an interpretation of recent C.M.S. medical work by an anonymous author. There are reproductions of photographs and maps, and at the end a list of C.M.S. medical missions in different parts of the world.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

The 1946 Year Book of General Medicine. Edited by G. F. Dick, M.D., *et al.* (Pp. 772. 21s.) Chicago: The Year Book Publishers; London: H. K. Lewis. 1946.

A summary of recent advances in medical science, with many references to the literature.

Modern Clinical Psychology. By T. W. Richards, Ph.D. (Pp. 331. 17s. 6d.) New York and London: McGraw-Hill Book Company. 1946.

An approach to psychological understanding of the personality from the point of view particularly of the psycho-analytic and derived schools. Intended for the intelligent layman as well as for psychologists.

Deep Analysis. By Charles Berg, M.D. (Pp. 261. 12s. 6d.) London: Allen and Unwin. 1946.

An account of the Freudian analysis of a single case. Intended for both doctors and laymen.

The Bacterial Cell. By Prof. René J. Dubos. (Pp. 460. 28s.) Cambridge, Mass.: Harvard University Press; London: Geoffrey Cumberlege. 1946.

Describes the physiology and structure of the bacterial cell and interprets the phenomena of virulence, immunity, and chemotherapy in terms of cellular organization.

Adolescent Sterility. By M. F. Ashley Montagu. (Pp. 148. $3.50.) Springfield (U.S.A.): Charles C. Thomas. 1946.

An investigation into the period of infertility that normally follows the onset of puberty in man and other mammals.

Principles in Roentgen Study of the Chest. By W. Snow, M.D. (Pp. 414. $10.) Springfield (U.S.A.): Charles C. Thomas. 1946.

Correlates *x*-ray interpretation with the physical signs, symptoms, and course of the disease. Profusely illustrated.

Our Inner Conflicts. By Karen Horney, M.D. (Pp. 250. 10s. 6d.) London: Kegan Paul, Trench, Trubner and Co. 1946.

This book is intended for the non-specialist as well as for psychoanalysts. It is divided into two parts: (1) Neurotic conflicts and attempts at solution, and (2) Consequences of unresolved conflicts. The author develops a theory of neurosis whose basic conflict is between the attitudes of "moving toward," "moving against," and "moving away from" people.

An Approach to Social Medicine. By John D. Kershaw, M.D., D.P.H. (Pp. 329. 15s.) London: Baillière, Tindall and Cox. 1946.

An examination of the structure of society and its bearings on human health and welfare, including wider issues such as the problems of genetics, sex, leisure, education, and food.

Clinical Hematology. By Maxwell M. Wintrobe, M.D., Ph.D. Second Edition. (Pp. 862. 55s.) London: Henry Kimpton. 1946.

Covers the whole field of haematology. Recent work considered includes the use of folic acid in pernicious anaemia, the Rh factor, the nitrogen mustards in the treatment of Hodgkin's disease, and the role of various vitamins in haematopoiesis. Many diagrams and illustrations, some in colour.

Penicillin in the Treatment of Infections. By C. S. Keefer, B.S., M.S., M.D., and D. G. Anderson, A.B., M.D. (Pp. 50. 8s. 6d.) London: Oxford University Press (Geoffrey Cumberlege). 1945.

An outline of the uses of penicillin in medicine and surgery, with an account of its chemical characteristics and pharmacology.

Principles of Hematology. By Russell L. Haden, M.A., M.D. Third edition. (Pp. 366. 25s.) London: Henry Kimpton. 1946.

Intended for the student and physician. Blood disorders are regarded as disturbances in the normal physiology of the constituents of the blood rather than as true diseases. Bone marrow and the study of bone marrow films are described.

Diseases of the Heart and Circulation. By A. A. Fitzgerald Peel, M.A., D.M (Pp. 398. 35s.) London: Oxford University Press (Geoffrey Cumberlege). 1947.

An introduction to the study of cardiovascular disease for students and practitioners. Many illustrations.

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THE COUNCIL'S RECOMMENDATION

The Council of the B.M.A. held a special meeting last week to receive the final plebiscite figures and in particular to consider the correspondence between the Presidents of the three Royal Colleges and the Minister of Health. The Presidents of the Royal Colleges have been criticized for intervening. Those critics who are strong individualists may on reflection consider their position is somewhat paradoxical in questioning the right of three prominent medical men to take an active part in seeking a solution of one of the most serious problems the medical profession as a whole has had to face. It would, however, serve little purpose to ignore the fact that the action of the Presidents has caused disquiet. Perhaps the chief reason for this is a general feeling that medico-political action is best taken by the organization whose job it is—namely, the British Medical Association. The Royal Colleges are primarily academic institutions, and the Presidents are elected to them because of their qualities as heads of such institutions. For them to enter the medico-political fray except as individuals is thought by many to place their colleges in a false position. Whether these objections will be sustained in calmer moments it is difficult to say; and however fiercely the Presidents may be assailed their professional colleagues must give them the credit for acting with the best of intentions and must at least admit that the intervention has drawn from the Minister of Health a statement which, while not offering much in substance, is at least conciliatory in tone. The critics have their right to be heard, and space has been given to them in the correspondence columns for this purpose. To put it at its lowest it would, however, be a tactical mistake if this episode were to be allowed to create a disunity in the profession; the Minister, being a shrewd politician, would wish for nothing better. Collectively, doctors must recognize that there are sharp differences of opinion in their ranks, but with that toleration which is supposed to be a British characteristic they must surely accommodate these differences within the framework of agreement on some fundamental issues. The first of these, and one which at the moment there is a tendency to lose sight of, is the need for a reorganization of the medical services in this country so as to provide the people with the best possible Health Service. The second—and this is a point on which there is only a small minority of disagreement—is opposition to the nationalization of medicine in the form of a State service.

The essence of the Minister's letter is his invitation to the profession to discuss the Regulations. Public opinion as expressed in newspapers of varying political colour considers the Minister has made a conciliatory gesture. For the medical profession to ignore this would put it at odds with the rest of the community, even though the public shows little understanding of the doctor's case. The Minister's letter has, in fact, changed the situation which existed when the Council last met and made its recommendation to the Representative Body not to discuss with the Minister the Regulations under the National Health Service Act. We should be clear what this change is. It is one of atmosphere rather than of fact. The Council was fully aware that there was not much of substance in the Minister's letter other than a different attitude on the part of Mr. Bevan to the question of basic salary and his official recognition of the right of the profession to hold a further plebiscite which may end in a refusal to work under an Act complete with its Regulations and Orders. The Council's discussion of the Minister's proposal is printed in this week's *Supplement*. The view of the Council is best summed up in the words of the Chairman, Dr. H. Guy Dain, as reported: "The Minister's offer was, in effect, an invitation to discuss with him on his terms within the structure of the Act the arrangements for carrying it out. His own view was that there could be no agreement to negotiate unless the discussions carried with them the understanding that if it were found necessary there would be further legislation to establish the principles to which the profession adhered . . . but they were not willing to allow the Minister, having tied up his own projects in an Act, to talk with them only within that framework." Dr. Dain further remarked that the Education Act of 1944 had been quickly modified by an Amending Act. The attitude of Council was summed up finally, and with no dissent, by the following recommendation to the Representative Body, which replaces the previous recommendation:

> That the Association, having considered the final results of the plebiscite and the Minister's letter of Jan. 6 to the Presidents of the Royal Colleges, and desiring to secure for the people the best possible Health Service, is willing that discussions be entered into with the Minister to that end, provided that such discussions are comprehensive in their scope and that the possibility that they may lead to further legislation is not excluded; that after the conclusion of these discussions a second plebiscite of the profession be taken on the issue of entering the Service.

The Council of the B.M.A. is therefore recommending the Representative Body to respond to the Minister's gesture of conciliation with a similar gesture. This is neither appeasement nor weakness. The recommendation is worded in plain language and means that the profession is willing to meet the Minister half way if he himself will meet them half way. The Council was not impressed with the Minister's attempt in his letter to suggest that he had negotiated the terms of his Act. It now asks him for a discussion which will include those features of the Act which the majority of doctors hold to be incompatible with a Health Service which would secure their willing co-operation. Mr. Bevan has the reputation of being an able politician with a remarkable gift of persuasive utterance. We hope he may seize the opportunity to show himself a statesman by responding to the profession's earnest desire to discuss clauses of the Act as well as the Regulations.

PAEDIATRIC PLANNING

The management and care of children in hospital is a subject which demands much more study than it has yet received. What work should be required of a children's hospital? What staff should it have? Is it possible to define, and fully to co-ordinate, the clinical, social, and supervisory responsibilities of doctors and nurses working in paediatric units? These are some of the questions posed, and answered, by Prof. J. C. Spence in his Charles West Lecture, which appears in this issue at page 125. He stresses the need for the closest day-to-day co-operation between paediatric physicians and paediatric surgeons, between obstetricians and paediatricians, and between doctors and nurses and the mothers whom for many years he has been admitting to his own unit to assist in the care and nursing of their children. Recently J. Tudor Lewis[1] asked for closer liaison between maternity units, hospital and home services, and public health departments as a means of preventing infant deaths following early discharge from a good maternity unit to a perhaps adverse home environment. For older children the risks of such an environment may be mitigated by attendance at a day nursery. The type of work undertaken at such a nursery is described in this issue (p. 147) by Dr. F. M. J. Forsyth. On the other hand recent work[2] has shown an unduly high incidence of respiratory infection in children attending such nurseries.

Children present problems to their parents and their doctors from the moment of conception onwards. There are the social problems which range from those so vividly illuminated by the Curtis Report,[3] which Prof. Spence helped to compile, to those of the unstable adolescent girl.[4] There are problems more purely medical, such as that of preventing cross-infection in children's wards,[5] wards which may date back to Charles West or which may be E.M.S. huts specially adapted.[6] Prof. Spence has considered one problem, that of the proper care and management of children of all ages in hospital for long or short periods. His contribution should be read in the light of the report[7] issued recently by the Paediatric Committee of the Royal College of Physicians of London. This report, to which much thought and care has been devoted over the past few years, outlines what is in effect a paediatric service for the nation.

Though paediatrics usually appears among the special subjects in medical curricula, there is no branch of medicine with wider associations and obligations, for it concerns itself with every aspect of health and disease during a particular age-period. It embraces, therefore, aspects of life which are not strictly or solely medical in the professional sense. Such influences as the educational status and economic circumstances of parents, housing conditions, opportunities for sound sleep and for recreation in suitable surroundings, conditions of school life, and many other environmental, social, and economic factors take an important place in paediatrics and must receive consideration and recognition in the child health service. There is, in fact, a real danger that the multiplicity of interests may result in a state of chaos. A co-ordinating and advisory authority is therefore needed, and this function will be best performed by men and women who hold a medical qualification, provided that their training has been planned to give them a sound understanding of both preventive and curative paediatrics. In the past these two aspects of the work have been separated by a gulf, which must now be bridged. The report deals at some length with this subject and expresses the view that the family general practitioner, armed with postgraduate training in the basic principles of public health as well as in prevention and treatment of illness in childhood, should continue in his role as the first line of defence. Working alongside him will be the hospital paediatricians and the "child health officers"—i.e., whole-time medical officers employed by local authorities. Now that institutes and departments of child health are springing up in many centres it should not be difficult to arrange for child health officers to maintain contact with curative paediatrics, and for hospital paediatricians to have opportunities for fuller experience in the prophylactic field. The Society of Medical Officers of Health has outlined a course of training suitable for child health officers; these recommendations are far-seeing and should be put into practice, with the addition of some experience in child psychiatry. All these proposals to broaden the experience and increase the interest of paediatric workers can be put into effect only if administrative medical officers and their committees are convinced that the general policy is a sound one.

The Committee's observations on hospital accommodation for children will be of special interest to the medical profession. It seems likely that England and Wales require some 23,000 beds for children suffering from acute illnesses, excluding fevers; most of these beds will be in the cities or larger towns, but some should be in the long-term hospitals outside the cities and therefore available for acute cases in the surrounding districts. Every children's hospital should have an infectious diseases section, and every fever hospital should, so far as possible, be linked with a general children's hospital. Clinics and long-term hospitals for special categories of patients have an important place in the scheme, and units for the training of mothers would serve a useful purpose.

The quality of the training given to the available doctors and nurses is of fundamental importance, and the report rightly devotes some space to this subject. The institutes and departments of child health are faced with heavy responsibilities and great opportunities which they will not be slow to accept, for their university status is assured and the necessary financial support is not likely to be withheld. Their influence upon the paediatric service will be measured not only by their contribution to teaching and research but by the service which their staffs will be able to render in an advisory capacity, granted the necessary provisions are made. The report suggests that in each region there should be a joint committee consisting of members of the university department of child health and the regional officers and local authority officers engaged in child health work, and that this committee should assist the Regional

1 *British Medical Journal*, 1946, 2, 893.
2 Ibid., 1946, 2, 217.
3 Ibid., 1946, 2, 697.
4 Ibid., 1946, 2, 904, 909.
5 Ibid., 1946, 1, 674.
6 Ibid., 1946, 2, 867.
7 Final Report of the Paediatric Committee, Royal College of Physicians of London, October, 1946.

Board by acting in an advisory capacity on all matters concerned with the health of children.

The report is well balanced and maintains a proper sense of proportion and values; as evidence of this it should be noted, especially by those who are critical of any encroachments by the State upon the liberty and obligations of individuals, that the following sentence appears on page 1: "Primary responsibility for the health of their children must continue to rest with parents, and they should regard members of the health services as agents helping them to carry out their duties and not as authorities taking the responsibilities off their shoulders."

DOCTORS ON TRIAL

Twenty-three German doctors are now being tried in Nüremberg for crimes committed during the war. A photograph of the accused men appears above the first article by Dr. Kenneth Mellanby on this subject at page 148 of this week's *Journal*. Dr. Mellanby has been to Germany to collect first-hand information on this matter, which is of profound significance in the history of medicine. It is a commonplace to say that medicine knows no frontiers, but behind this statement lies the recognition that medicine as it is practised in the civilized world is a product of Western civilization and therefore inspired by Christian ethics and Greek thought. The code of the civilized doctor is the Hippocratic oath. When, therefore, any group of medical men in a country claiming to be civilized offends against the spirit and tradition of Western medicine the offence becomes the concern of all doctors who follow the same tradition and try to live up to the same spirit. To ignore the infamy of those German doctors who have betrayed their trust and their profession would in part be to condone it. For this reason alone, therefore, we consider that the facts being disclosed at Nüremberg should go on record in the pages of a medical journal.

It was, we believe, Goering who said that Hitler was the keeper of his conscience. A glance at the diagrams in Dr. Mellanby's article showing how medicine was controlled in Nazi Germany suggests how it was possible for some medical men to make the same easy and fatal surrender—the surrender, in fact, of the individual conscience to the mass mind of the totalitarian State. It is probably impossible for the British doctor to understand the mentality of the German doctors accused of brutal experimentation on fellow human beings, because he has not been submitted to a systematic degradation of human values over a period of 10 or more years. The question whether valuable information secured by such experiments should be used for the benefit of others has been discussed in the correspondence columns of our contemporary, the *Lancet*, in letters which show how difficult it is to look at such a problem in a dispassionate and objective manner. Dr. S. M. Hilton[1] points out that "valuable information has already been obtained by observation of victims systematically starved by their Nazi oppressors; yet no objection has been raised on moral, ethical, or political grounds." Mr. Denis Herbert[2] writes: "If their results are capable of being put to useful purposes and we destroy them we are ensuring that they have produced nothing but evil. If we publish and use them then at least some good will have followed." The situation might be summed up by posing this question: If in their experiments German doctors had discovered a cure for cancer would the rest of the world say that this information must be destroyed because of the manner in which it was obtained? To say that such information should be used would surely not be interpreted as condoning the method or as encouraging others to pursue similar methods.

[1] *Lancet*, 1947, 1, 43
[2] Ibid., 1947, 1, 84

HYGIENE IN THE KITCHEN

Communal feeding for all grades of society has probably come to stay in our country as it has in America. Food rationing, shortage of domestic help, and difficulties in travel have led to an increasing proportion of "meals out," while works and school canteens have multiplied a thousandfold during recent years. This communal feeding must increase the risks of food-borne infection unless the highest hygienic standards are maintained in the kitchen, and the steady rise in the number of reported outbreaks of food poisoning during the war years,[1] from 47 in 1940 to 550 in 1944, reflects in some measure the present dangers from the communal meal. While a fair number of these outbreaks have been due to contamination of food with intestinal pathogens of the Salmonella and dysentery groups a large proportion have been, clinically and epidemiologically, examples of toxic food poisoning such as is caused by the enterotoxic staphylococcus, but may also be due to other less well differentiated bacteria. Indeed there is bacteriological evidence that any gross bacterial contamination of food may result in an outbreak of gastro-enteritis.

The main sources of bacterial contamination are the hands of the kitchen staff and the utensils used for handling and holding food. Food that has been cooked and improperly stored overnight—and cold storage is often lacking or inadequate—is a particular danger, since such food acts as a culture medium for bacteria from hands or utensils. The danger from the latter source is well exemplified by the bacteriological examinations of crockery and cutlery in a variety of restaurants recorded in our present issue by Dr. Irene Hutchinson. Of a large selection of spoons, cups, forks, plates, and glasses, swabbed after they had been washed and stacked, she recovered *Staph. aureus* from 3–12%, haemolytic streptococci from 1–4%, and coliform organisms from 20–40% of the utensils, while *Str. faecalis* and *Str. viridans*, indicators of faecal and salivary contamination respectively, were present in a high proportion of the examinations. The Sonne dysentery bacillus was once isolated from a spoon. No mention is made about bacteriological examinations of larger cooking utensils or containers, but the fact that 50% of 38 dish-washing waters that were examined gave counts of one million or more bacteria per ml. growing at 37° C. suggests that kitchenware generally would be heavily contaminated. The consequent risk to improperly stored food is obvious. Whether crockery and cutlery carrying respiratory pathogens such as *Staph. aureus* and haemolytic streptococci are likely vehicles for the spread of infection by these organisms would be difficult to prove; perhaps the risk is greater with certain respiratory viruses which can infect in very small dosage. But the thought that the crockery and cutlery served with a meal may still harbour the bacterial flora of a previous user must be repugnant to all, and for both hygienic and aesthetic reasons measures are urgently needed to improve kitchen hygiene.

The greatest need is for education of the food handler. Much progress has been made along this line in America, where health authorities have found restaurant proprietors and staff very willing to be educated in methods for avoiding or minimizing food contamination. In this country

[1] See the Report of the Chief Medical Officer, Ministry of Health, on *The State of the Public Health During Six Years of War*, p. 42.

courses of instruction on food hygiene for food handlers are about to be begun on a large scale under the auspices of the Central Council for Health Education.[2] The present plan is to give a course of three lecture-demonstrations to key personnel in catering establishments and to follow up this intensive course with simpler instruction to kitchen staff, waitresses, and the like. Too often, however, the menial work of washing up in the kitchen is done by staff of low educability, and here the need is for better conditions and wages to attract more intelligent workers. The educational programme should be supplemented by increased powers of supervision by the Medical Officer of Health and his sanitary inspector, who at present have no right of entry into catering establishments except to inspect the premises where food is prepared and sold and to ensure that washing facilities are available. Indeed, the existence of most factory canteens comes to the knowledge of the Medical Officer of Health only indirectly, for local authorities are not compelled to register them.

Facilities for dish-washing and for cold storage of food, particularly prepared food, need to be greatly improved. If crockery and cutlery are to be properly cleaned and freed of bacterial pollution they must, after removal of food residues, be washed in water at 120–140° F. with a suitable detergent, of which there are now many on the market. They should then be transferred to a separate sink and rinsed, preferably in wire-mesh containers or racks, at a temperature of 170° F. for two minutes. They could then be drained, allowed to dry without wiping, and stored in a covered cupboard. The wash water must of course be changed frequently, and if cloths are used for wiping they should be boiled daily. Mechanical dish-washers with separate washing and rinsing compartments do the job much more efficiently than the human hand and at a considerable saving of labour. Such dish-washers are being made in this country, and no doubt large catering firms who have had experience of them can help manufacturers to improve design and also advise smaller firms about their availability and uses. The kitchen itself should be large, with plenty of cupboards and cold storage, well lighted and ventilated, with walls and floors that can be easily washed, and preferably in full view of the customers, so that everyone may know that the food he eats is being prepared and served under the best hygienic conditions.

GYNAECOMASTIA

Many who served as medical officers in the Armed Forces will have encountered cases of enlarged or painful breasts in males. This relatively mild disability attains a greater importance in Service life, for the sufferer is liable to be exposed to the ridicule of his fellows and to become ashamed of his abnormality; and webbing equipment may rub on the swollen breast causing discomfort or even considerable pain, a point which, it is interesting to recall, was observed as long ago as 1868. A full review of the condition as it was encountered in the United States Army, where the frequency was about 16 per 100,000 men, has recently been published by Karsner,[3] who had access to the records of 284 cases.

By true gynaecomastia is meant a swelling due to hyperplasia of breast tissues occurring in the male, and it has to be distinguished from a mere deposit of fat in the breast region. The hyperplastic mammary tissue can be felt as a firm button or plate-like mass under the nipple. It does not usually adhere either to the nipple or to the deep structures. In the great majority of cases the condition is unilateral, both breasts being involved in only twelve of Karsner's cases. The two sides are affected with about equal frequency. The weight of the abnormal tissues when excised varies from 25 to nearly 400 grammes, the mass consisting of a proliferation of connective tissue together with an increase and often a proliferation of duct tissue. The secretion that sometimes distends the ducts is probably a mucinous substance and not strictly comparable to colostrum. Acini and lobules are not formed. Some inflammation is usual in these tissues, but it is not closely related to the degree of tenderness complained of. No tendency to neoplasia was seen in any of Karsner's series.

The cause of the condition is still a matter for speculation. The majority of the cases are probably primary in the sense that the abnormality originates in the breast tissue itself. The fact that most cases are unilateral does not exclude an endocrine factor (exophthalmos may be unilateral in hyperthyroidism), but in only a small proportion of the cases was there any evidence of endocrine abnormality. Occasionally a testicular neoplasm was present: Karsner found seven such tumours—two embryonal carcinomas, four malignant teratomas, and one choriocarcinoma. In such cases there is a large production of chorionic gonadotrophin, which may well be an aetiological factor, though satisfactory proof is lacking. The rare adrenal cortical tumours may cause gynaecomastia; and it has also been observed after treatment with adrenal cortical extract and with desoxycorticosterone acetate. Oestradiol and stilboestrol may cause it in man. In most cases, however, there is no evidence of disturbed production of any of these hormones, and the gynaecomastia may be attributed to an unusual sensitivity of the breast tissues to hormones circulating in almost normal quantity.

The treatment of the condition is surgical removal of the breast tissue if pain or anxiety is being produced by it. Endocrine therapy has no consistent beneficial influence on the swelling.

PROGNOSIS OF HYPERTENSION

When queues begin to form for the surgical treatment of hypertension the moment is propitious for reviewing the natural history of the disease. The publication of Bechgaard's extensive monograph[1] dealing with a detailed eleven-year follow-up study of more than 1,000 cases of hypertension is therefore timely. The material is well handled and presented and the literature conveniently reviewed (there are 269 references). The cases were taken from the out-patient polyclinic of the Rigshospital in Copenhagen, and of the total number of 1,038 hypertensives as many as 1,002 were successfully traced. By hypertension was meant a blood pressure of not less than 169/90; the average was 190/110 taken after 15 minutes' rest. The majority were cases of essential hypertension, only 1.3% being malignant and not more than 20%, and probably far less, being renal. There were 325 men and 713 women: but the overall ratio at the clinic was 3:2 in favour of women. They were mostly of the working classes. Of the malignant group none were due to a unilateral "surgical kidney."

The sex incidence for malignant cases was 3:1 in favour of men (cf. Volhard 5:1, Ehrstrom 3:1, and Page 2:1—all cited). The importance of heredity as an aetiological factor was shown by the calculation that the incidence of hypertension among the parents must have been about 75% (cf. Ayman[2] and Hines[3]).

[2] *Health Education Journal*, Jan., 1947, p. 11.
[3] *Amer. J. Path.*, 1946, **22**, 235.

[1] *Acta. med. scand. Suppt.*, 1946, **172**, 269.
[2] *Arch. ntern. Med.*, 1934, **53**, 792.
[3] *Proc. Mayo Clin.*, 1940, **15**, 145.

The mortality rate was twice as high in men as in women for all age groups if cases of renal hypertension were excluded. It was not adversely influenced by obesity—rather the reverse—nor by the height of the blood pressure provided that it was below 200/130 in men and 220/130 in women ; but it was doubled if there was evidence of hypertensive heart disease. The death rate for all cases of high blood pressure expressed as a ratio of that of the general population of Denmark was 2.88 : 1 for men and 1.43 : 1 for women ; the death rate in renal hypertension expressed in the same way was 18 : 1. Over the 4–11-year period 41% of the men and 22.4% of the women died. The cause of death was cardiac in 45%, cerebral in 16%, and renal in 10%. The group is comparable to those studied by Janeway[4] and Blackford, Bowers, and Baker,[5] and on the whole the conclusions are similar. Statistics taken from hospital in-patients with hypertension are less favourable.

In the follow-up examination 13% of the men and 2% of the women had regained normal blood pressures. Of 78 women who might have been diagnosed as cases of menopausal hypertension at the first examination, none regained normal pressures ; nor did the graph of age incidence show the least tendency to a peak at the climacteric. During the period specified 0.2% of those with essential hypertension and 8% of those with chronic pyelonephritis entered the malignant phase.

These various facts suggest that lumbo-dorsal sympathectomy might be reserved with advantage for males with blood pressures of 200/130 or above, and for females with blood pressures of 220/130 or above ; but the males should not be expected to do more than half as well as the females. The tendency to deny operation to obese females on technical grounds is supported now on a prognostic basis. Hypertensive heart disease, far from being a contraindication to surgery, would appear to be an added inducement, especially as it may be reversible (Paul White, 1946).

L ORGANISMS IN GENITAL TRACT

Organisms of the pleuropneumonia group, conveniently called L organisms, are comparatively widely distributed, and many of the species are pathogenic for animals, especially cattle and rodents. Their presence in the genital tracts of men and women has been reported by Dienes,[6] Dienes and Smith,[7] Beveridge,[8] Klieneberger-Nobel,[9] and by Salaman.[10] Beveridge, Campbell, and Lind[11] isolated these organisms from 20% of male patients with non-specific urethritis, and complement-fixation tests were positive in over two-thirds of sera tested ; they also found them in 17% of women attending a gynaecological clinic and state their belief that non-specific urethritis, which was relatively common in the Australian Forces, was in the majority of cases due to them.

Salaman[12] has carried out an investigation in a British military hospital and cultured L organisms in males from twelve out of thirty-five cases of gonorrhoea, three out of forty-five cases of non-specific urethritis, two out of thirty-four cases of residual non-specific urethritis after gonorrhoea, and from three out of twenty-four cases without signs of genito-urinary disease ; and in females from eleven out of eighteen cases of gonorrhoea, thirty-nine out of sixty-three cases of trichomonal vaginitis, eight out of eighteen cases of non-specific cervicitis, twenty out of twenty cases of gonorrhoea and trichomonal vaginitis, six out of eight cases of non-specific cervicitis and trichomonal vaginitis, but from only one out of seventeen clinically normal women. These results are not very conclusive, but what is remarkable is that he was able to detect L organisms by means of penicillin, which inhibited gonococci but not L organisms, in each of eighty strains of gonococci that he examined.

These organisms were found to grow well on 10% chocolate agar in an atmosphere of carbon dioxide ; they were demonstrated by cutting out pieces of the medium, placing them face downwards on a slide, and fixing and staining by a special process. They are intermediate between bacteria and viruses and under the microscope appear as a framework of very fine filaments, in the meshes of which are clusters of vesicles, 2–10 microns in diameter, containing tiny granules. Salaman offers four possible explanations : L organisms (1) may be degenerative forms of gonococci, (2) may invariably contaminate strains of gonococci, (3) may live in symbiosis with gonococci, or (4) may be stages in the life cycle of gonococci. The last possibility is very attractive, especially in view of the difficulty of demonstrating gonococci in chronic and complicated gonorrhoea. Nevertheless much more work needs to be done before any definite conclusions can be drawn.

4 *Arch. Intern. Med.*, 1913, **12**, 755.
5 *J. Amer. med. Ass.*, 1930, **94**, 328.
6 *Proc. Soc. exp. Biol.*, N.Y., 1940, **44**, 468.
7 Ibid., 1942, **50**, 99.
8 *Med. J. Austral.*, 1943, **2**, 479.
9 *Lancet*, 1945, **2**, 46.
10 *J. Path. Bact.*, 1946, **58**, 31.
11 *Med. J. Austral.*, 1946, **1**, 179.
12 *Brit. J. ven. Dis.* 1946, **22** 47.

EPIDEMIC KERATO-CONJUNCTIVITIS

The concept of epidemic kerato-conjunctivitis has clarified ideas on various obscure conjunctival and corneal lesions. Different aspects of this protean affection have been recognized in the past, as the designations superficial punctate keratitis, macular keratitis, nummular keratitis, keratitis subepithelialis, and many others testify. That trauma is probably a factor is suggested by the name of shipyard keratitis, and the localities of epidemic outbreaks seem to implicate the sea-coast in the chain of causation. Clinically the significant features of the disease are its great infectivity, the involvement of the pre-parotid lymph nodes, the prolonged course, the serous nature of the conjunctival reaction with disproportionately heavy symptoms, the absence of bacteria in the conjunctival secretion, and the variegated corneal lesions. Pathologically there is much to support the work of Sanders, who isolated a filter-passing virus. The condition has proved resistant to treatment.

Epidemics of kerato-conjunctivitis have been noted in recent years in widely scattered parts of the world. Apart from the severe epidemic on the Pacific coast of the United States and subsequently on its Atlantic coast there was an epidemic in 1937 in the Middle East, persisting for several years, and apparently one in Germany in 1940. The German epidemic seems to have been sufficiently severe and protracted for the Swiss authorities to promulgate special measures for the protection of their armed forces in June, 1945—a measure regarded as panicky by Rintelen.[1] Of the epidemic in the Middle East Feigenbaum, Michaelson, and Kornblüth[2] have contributed a valuable study based on material observed in Palestine. Like other observers, they stress the roles of trauma and ill-defined climatic factors ; like them, too, they failed to find inclusion bodies in epithelial scrapings. Though they do not go as far as Wright in speaking of keratitis diversiformis, they stress the great variety of corneal reactions, which consist mainly of ill-defined subepithelial dots. There are, however, also definite subepithelial infiltrates, or superficial epithelial infiltrates, and more rarely disciform keratitis.

1 *Ophthalmologica*, 1946, **111**, 108.
2 *Brit. J. Ophthal.*, 1945, **29**, 389.

The conjunctival reaction they observed was also variable and must be regarded as the primary lesion, though corneal involvement existed in well over half the cases; there may be a non-specific congestion, velvety reaction, or follicular hypertrophy simulating trachoma. Histological examination of human conjunctiva showed flattening of the epithelium, marked capillary dilatation, oedema in the subepithelial tissue, and subepithelial infiltrates with lymphocytes and large mononuclear cells. They could confirm the specific infective nature of the disease by rabbit experiment, while by tissue culture and filtration experiments they, like Sanders, found the infective agent was a filterable virus. In contrast to the immunity seen in patients and shown by immune tests none is developed by the rabbit.

A further contribution on epidemic kerato-conjunctivitis, as seen in the Middle East, has been made by O'Donovan and Michaelson[3] on cases in Egypt. Here a striking aspect was an associated skin lesion—mainly seborrhoeic dermatitis involving the scalp and face. To what extent this association is parallel to that found in herpes simplex and zoster they leave an open question.

RELIEF OF ITCHING AND URTICARIA

In 1937 Bovet and Staub[4] detected anti-histamine activity in certain aromatic derivatives of amino-ethyl and ethylenediamine, and since then much progress has been made. The obvious field of application is in allergic conditions in which histamine—or H substance—probably plays an essential part. Efficient anti-histamine substances should relieve allergic manifestations and may lead eventually to a better understanding of allergy. According to Mayer[5] the mechanism of action of these substances is unknown, and the idea generally accepted at present is of a competition with histamine analogous to the displacement of *p*-aminobenzoic acid by the sulphonamides.

Over eighteen months Brack[6] tested upon over a hundred skin cases an anti-histamine substance 2(*n*-phenyl-*n*-benzyl-aminomethyl) imidazolin, marketed as "antistin." He has found it is possible with suitable dosage to diminish or abolish the irritation in all cases of urticaria, eczema, neurodermatitis, prurigo, lichen ruber planus, psoriasis, nervous pruritus without cutaneous changes, and post-scabietic itching. In urticaria the rash can be relieved or suppressed, but in the other skin conditions mentioned no direct effect on the disease is obtainable, though relief of the itching helps considerably. In some cases, perhaps by breaking a vicious circle, complete cure results, but as a rule, and where the underlying cause is still operating, the duration of the action of "antistin" is essentially temporary. That it acts peripherally on the vasomotor system is shown by the effects of local application in scratch tests with histamine, diethylmorphine, and simple trauma, when suppression of itching and reduction in the weal size always obtain.

"Antistin" can be given orally (0.1 g. tabs.), intramuscularly, or intravenously (0.1 g. in 2 ml.). Success in treatment depends largely on finding the suitable dose. The initial dose should be small, and intravenously 0.1 g. should be given very slowly over five minutes. The only common unpleasant side-effect is transitory faintness or giddiness, which requires a reduction in oral dosage or of speed of injection. Brack points out that the patients themselves often limit the dosage after getting such attacks. Some patients ask if they have been given a strong hypnotic, and this action of "antistin" is attributed to the effect of the relief of itching in an exhausted patient, though a central effect is not yet disproved.

This observation is of special interest in view of the drowsiness which often occurs with "benadryl"[7] (β-dimethylamino-ethyl benzhydryl ether hydrochloride), another new anti-histamine substance recently synthesized. Curtis and Owens[8] have tested this drug in eighteen patients suffering from chronic urticaria which was completely controlled, in all but four cases, so long as the patient continued treatment, but it recurred immediately the drug was withdrawn. Doses of 50 mg., given three times a day, produced relief within two hours in most cases, but many complained of a feeling of drowsiness; and in one case there were severe weakness and vertigo, which passed off on stopping the "benadryl." Shaffer, Carrick, and Zackheim[9] have also used the drug in ordinary urticaria, in papular urticaria of children, and in eczema. Their findings in urticaria are similar to those of Curtis and Owens. Only a few cases of strophulus and eczema were treated, but the drug did not appear to be of great value in these conditions. They noted that the maximum response to the drug occurred twenty to sixty minutes after oral administration and lasted for five to eight hours. "Benadryl" controls the pruritus and temporarily clears the eruption in urticaria, and it is suggested that it may be usefully administered in chronic cases while appropriate investigations are being conducted.

SCOTTISH DOCTORS RESIST

The movement for a closed shop for doctors has spread to Scotland. On Jan. 7 the Motherwell Town Council passed this resolution:

> That as from and after Feb. 1, 1947, it shall be a condition of employment or continued employment in the Departments of the Town Council, or any of them, that every employee shall be or shall have become a member of the Trade Union appropriate in his case.

A minority of the Council was opposed to coercion or applying the condition to existing employees who are non-unionists. Baillie Welch moved the above motion on behalf of the Labour Group of the Council and in face of a communication from the Department of Health for Scotland which ended thus, "... while the Secretary of State is anxious that doctors, nurses, and members of similar professions should join a trade union or appropriate professional association he considers that this matter should not be determined by the unilateral action of local authorities." The Scottish Secretary of the B.M.A. immediately drew the attention of the Town Clerk of Motherwell to the opposition of the B.M.A. to the imposing of such condition of employment on members of the medical profession. At the same time he was assured by the Secretary of the Scottish Branch of the Royal College of Nursing of the co-operation of the Scottish nurses in any action they might take. Eight medical men holding part-time appointments with the Motherwell and Wishaw Town Council immediately tendered their resignations, stating in a resolution that they had no intention of joining a trade union or professional association at the dictation of the Town Council. These Scottish doctors also observed that the Town Council had broken their contracts by introducing a new condition of service without giving the necessary three months' notice.

Medical men in England will applaud the prompt action of protest on the part of their Scottish colleagues. It is only by such action that the present epidemic of dictators will be brought to an end.

[3] *Brit. J. Ophthal.*, 1946, **30**, 193.
[4] *C. r. Soc. Biol.*, Paris, 1937, **124**, 547.
[5] *J. Allergy*, 1946, **17**, 153.
[6] *Schweiz. med. Wschr.*, 1946, **76**, 316.
[7] *J. Allergy*, 1946, **17**, 145.
[8] *Arch. Derm. Syph.*, Chicago, 1945, **52**, 239.
[9] Ibid., 1945, **52**, 243.

WORK AT A DAY NURSERY

BY

F. M. J. FORSYTH, M.B., Ch.B.

This is a report of the work done at a day nursery (Battersea Central Mission) from September, 1944, to December, 1945, during which time 60 children between the ages of 2 and 5 years attended. The nursery is situated in a poor district in South London, and suffered a fair amount from "buzz-bombs" and rocket bombs. The work can be classified under three headings: (1) preventive medicine; (2) social and psychological medicine; and (3) treatment of minor ailments and injuries.

Preventive Medicine

Our lines of attack in prevention are the three usual ones: maintenance of general health, early isolation, and immunization or similar active measures. The record for infectious diseases over the period under review is as follows:

Complaint	No. of Cases	Time of Occurrence
Measles	10	Feb., 1945, 3 cases; March and April, 1945, 7 cases
Mumps	1	June, 1945
Chicken-pox ..	7	July, 1945, 1 case; Sept., 1945, 6 cases
Whooping-cough	3	Oct., 1945
Scabies	3	Sept., 1945—two of these were brother and sister
Impetigo	1 (secondary to scabies)	
Scarlet fever ..	None	
Diphtheria ..	"	
Gastro-enteritis ..	"	

Maintenance of General Health.—(1) All children have to present a doctor's certificate recommending their admission to the nursery and also after being away sick with any infectious condition. (2) New entrants are medically examined on admission. (3) Routine medical examinations are made at frequent intervals, with weighing. (4) The diet is balanced, with an adequate vitamin intake. (Ultra-violet light and carbon-arc and mercury-vapour lamps are available in the physiotherapy department.) (5) A rest period is arranged, and there is a regular routine. It cannot be sufficiently emphasized that our children would not have a regular routine, discipline, or proper meals in their own homes. The usual diet would be bread and jam, chips, or ice-cream, taken when hunger or fancy dictated, and eaten in the street in all probability. Their priority oranges and eggs are often sold to adults or given away to sick friends. Even toddlers play in the streets on their own until late at night—without any rest during the day. A fair number, through absence of training, wet themselves during the day up to 4 or 5 years, and at night up to 7 years.

Early Isolation.—The matron has had much experience in fever hospitals and quickly notices any child that is "off-colour"; it is put in the isolation-room at once. All children's heads are inspected for lice on arrival and "spots" are also looked for. The fact that we have had only 3 cases of scabies in 60 children over a period of 15 months is proof of her efficiency.

Active Measures.—(1) No child is accepted now for the nursery unless it has been immunized against diphtheria within two years, or its parents agree to our carrying out immunization or reimmunization at once. The children were Schick-tested before reimmunization in November, 1944, but this year, owing to the occurrence of a few cases of diphtheria in the district, all those nearing the end of the two years were promptly reimmunized. So far we have not Schick-tested the children following immunization. (2) We recommend vaccination when it has not been done, but do not insist as in the case of diphtheria immunization. (3) Patch tuberculin tests are carried out on any child that is not doing well. Nine children tested were all negative and gained well after a course of ultra-violet ray treatment. We hope to make a routine patch-test on new admissions in the future. (4) Through the courtesy of the L.C.C. Southern Group Laboratory we were able to give 10 ml. of adult measles serum to each of 13 children during the measles epidemic of January-April, 1945. We had no reactions. The children selected were the youngest and most delicate of those who had not already had measles. Only one child of the 13 contracted measles. This was a mild attack, occurring 9 weeks after injection, in a delicate only child subject to bronchitis. The medical officer of health for Battersea informs me that 1,029 cases were reported for the district from Jan. 1 to March 31, 1945. We had eight cases amongst our 60 children in the same period—38 of the children had not had measles before. (5) In October, 1945, following two cases of whooping-cough in the nursery, I carried out a series of whooping-cough inoculations. Four children had the combined whooping-cough vaccine and A.P.T. in the usual dosages at weekly intervals except for the fourth dose, which was given one month after the third. Nineteen children had slightly increased doses of the standard "A" whooping-cough vaccine (Parke Davis 4,000 million Bordets per ml.). In view of the much larger doses used in America, the doses given were 0.75, 1, 1.25, and 1.5 ml. In four of these 19 local swelling and redness followed the second dose, and in each case the child was 3 years old. In these four cases the remaining doses were kept at 1 ml., and there have been no reactions. Up to date only one case of whooping-cough has developed, and that in a child who had a cough at the time of inoculation. The case was a severe one, complicated by bronchopneumonia. The interval between the first three doses was three days. The fourth dose was given three weeks after the third.

Social Medicine

From September, 1944, until August, 1945, we had in the nursery two mentally defective children—brother and sister. The boy, aged 5 years, had been unable to speak, and his mother had been advised to send him to the Fountain Hospital as a hopeless case. The little boy was of an affectionate disposition, and became able, after some months in the nursery among normal children younger than himself, to say one or two sentences and to make very good efforts to get himself understood. During the war we could find no speech clinics which could take him, and we did not have sufficient staff to give him individual dancing or exercise lessons. The matron, however, trained him to put out the cups and plates for tea and to collect the dirty things after a meal. His star sentence became, "Can I collect up the cups?" but it needed a little skill to understand him. The teacher also discovered that he had an excellent sense of rhythm and could beat in time to music. He is of course now attending a special school under the new Act. The sister, aged 3 years, also mentally defective, could speak, but we could not establish as much contact with her. Her twin was normal.

Conclusion

Day nurseries are of supreme importance in improving the health of the coming generation and form a link between the infant welfare clinic and the school clinic during the important years between the ages of 2 and 5 years. Those who are the only child and mild mentally defective cases benefit greatly from contact with other children and from expert handling by a trained staff.

The Year Book of Radiology is now so well established that the 1945 edition needs no introduction to the radiological world. As before, it has as editors C. A. Waters and W. B. Firor in diagnosis, and I. I. Kaplan in therapy. Each subject occupies about half the book. The diagnostic half contains references to many articles of importance. In the section on bones and joints articles of note are those on stress fractures of the 1st rib by Alverson and others, "Significant Skeletal Changes in the Hand" by Holt and Hodges, and one by Holmgren, of Sweden, on free fat in the knee-joint after injury. From the Mayo Clinic comes a report on six cases of Allbright's disease. Lloyd Rusby's important review of 246 cases of dermoids and teratomas of the mediastinum receives due prominence, as does O. A. Nelson's interesting work on arteriography of the abdominal aorta. In the same section is Baker and Miller's account of 100 consecutive cases of venography of the lower limbs. The section on radiotherapy again gives a comprehensive account of recent work in the various branches of this subject, including radiobiology. The 1945 yearbook (H. K. Lewis and Co.; 30s.) well maintains the high standard set by its predecessors, and will be valued by all who are fortunate enough to obtain a copy.

FIG. 1.—The Accused Men

MEDICAL EXPERIMENTS ON HUMAN BEINGS IN CONCENTRATION CAMPS IN NAZI GERMANY

BY

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The present trials of many German doctors and medical administrators before Military Tribunal I of the United States of America at Nüremberg has drawn public attention to the vast number of human experiments, many of which proved fatal to the victims, which were carried out on prisoners in concentration camps. This trial is not yet over, and many more trials of a similar nature are likely to take place in the near future; it would therefore be improper at this time to discuss in any detail the personal responsibility or guilt of any of the defendants, since the matter is still *sub judice*. However, many points have already been clearly established, and a picture of the organization and conditions which made these actions possible can be given.

Some people in this country have suggested that the accounts which they have read of these experiments, and of conditions in concentration camps generally, have been wilfully distorted as propaganda in order to intensify hatred against Germany. It has even been suggested that few or even no experiments of an objectionable nature ever took place. The *fact* of the experiments was clearly proved by the International Military Tribunal which tried Goering and his colleagues. The judgment of the I.M.T. states:

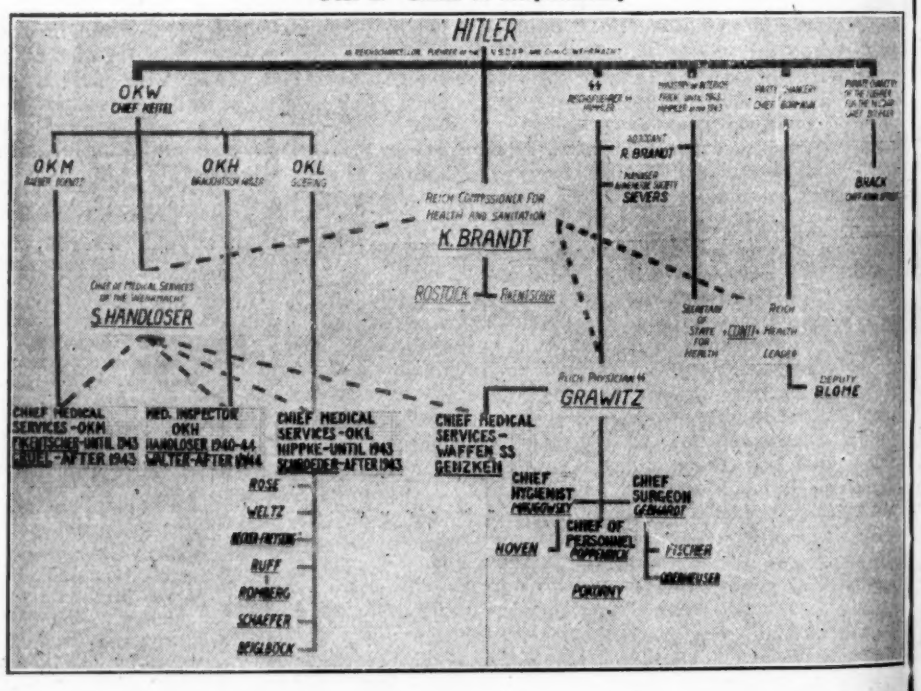
"The inmates [of concentration camps] were subjected to cruel experiments; victims were immersed in cold water until their body temperature was reduced to 28° C., when they died immediately. Other experiments included high-altitude experiments in pressure chambers, experiments to determine how long human beings could survive in freezing water, experiments with poison bullets, experiments with contagious diseases, and experiments dealing with sterilization of men and women by *x* rays and other methods." There are many references to these and other experiments in the judgment, and to the responsibility of the various Nazi leaders and organizations. There is no doubt that thousands of individuals were the involuntary victims of medical experiments and that a high proportion died. Many more died as a result of medical neglect or improper treatment. Finally, thousands of prisoners were put to death by methods devised and executed by physicians engaged in "research" into the problem of killing as rapidly and expeditiously as possible.

The Punishment of War Crimes

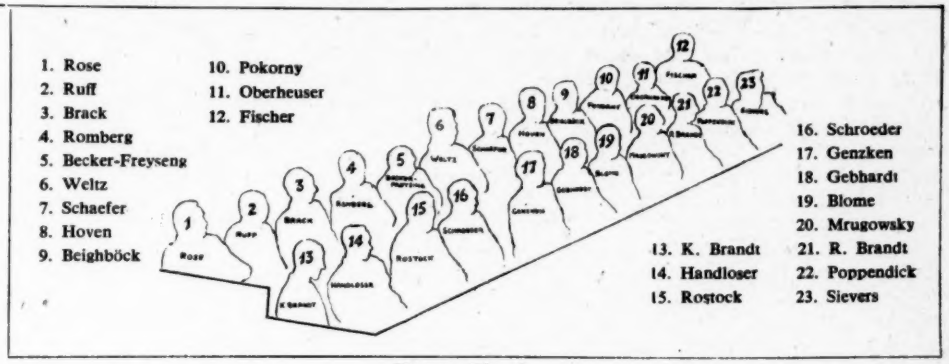
Before the end of the war the Allies resolved that after victory those members of the Axis Powers who had been guilty of war crimes should be made to pay the penalty, and they established an elaborate mechanism to ensure this. In Germany the International Military Tribunal, representing Britain, France, Russia, and the United States, was set up to try the leaders of Nazi Germany who were deemed to have the major responsibility for the crimes which caused the war and which accompanied hostilities. While this tribunal was still sitting each of the four occupying powers set up its own military tribunals to try the "lesser fry." Long before the I.M.T. had reached its decision the other tribunals had completed numerous cases, acquitting some defendants, convicting others and sentencing them to death or imprisonment. It is intended that a uniform standard of justice should be maintained by all powers.

Defendants have already been convicted and executed for carrying out medical experiments. Thus at Dachau early in 1946 Dr. Klaus Karl Schilling, the eminent malariologist, was hanged for his part in experiments in which some 1,200 prisoners were infected with malaria. He had a greater claim than most of the experimenters to the title of scientist. He went to Dachau on the invitation of Himmler to carry out experiments in malaria, on which subject he was a well-known authority (he had been a member of the League of Nations Malaria Commission). He was over 70 when these experiments were carried out. Believing that the experiments would provide an unequalled opportunity for the advancement of malariology he used a mild strain of benign tertian malaria which would be unlikely to prove fatal in healthy individuals, and he himself appears always to have administered drugs carefully and scientifically. He is said usually to have obtained the consent of the prisoners before he infected them, but at Dachau this could not amount to very much. He was accused at a trial held by the U.S. authorities of having caused many deaths. The Court took the view that "although Dr. Schilling's motive may have been sincere and purely a scientific one, his activities exemplified the Nazi schema which existed at Dachau. The

FIG. 2.—Chain of Responsibility



part he played in that schema is clear." Quite a number of other medical research workers, some of whose names have been mentioned in evidence at the present Nüremberg trial, are under detention awaiting examination before American, British, French, or Russian tribunals. It is a pity that the existence of these other tribunals is so little known. They are doing a difficult and thankless job, often revealing facts of great interest and importance about medical experiments and other activities.



Key to Fig. 1.

It is a little difficult to give briefly a clear statement of the legal basis on which these various tribunals operate, and some eminent jurists feel that the situation is unsatisfactory and may lead to serious abuses. The tribunals do not work strictly according to the legal code of any country. They follow the laws as set forth by the Allied Control Council in 1945, and they attempt also to abide by decisions and resolutions of various international conventions, such as that signed at The Hague in 1907. The laws of evidence are as a rule rather liberally interpreted, and as a result much time is spent in wrangling between the opposing counsel as to the admissibility or otherwise of affidavits and other documents. My own impression is that the various tribunals do in fact preserve a proper judicial impartiality and make every effort to give all the defendants a just hearing.

The Indictment

The twenty-three defendants at present on trial at Nüremberg are all charged on three specific counts, and ten of them face a fourth charge. The charges are as follows: I. The common design or conspiracy. II War Crimes. III. Crimes against humanity. IV. Membership of a criminal organization (this applies to the ten members of the S.S.).

To the non-legal mind the first three charges are very confusing, for they all refer to various aspects of the same activities. It is under Charge II, War crimes, that the various medical experiments are given in detail and the particular responsibilities of the different defendants are listed. The experiments, which will be dealt with in more detail in a later article, concern toleration of high altitudes, resistance to freezing, malaria infection, mustard gas, treatment with sulphonamides and other substances of artificially inflicted wounds, the regeneration of tissues in artificially inflicted wounds, the potability of sea water, epidemic jaundice, methods of sterilization, epidemic typhus, effects of poison, the treatment of burns by incendiary bombs. Further crimes consist of the murder of 112 Jews to produce a skeleton collection, and the various "euthanasia" programmes for removing scores of thousands of Poles with tuberculosis and millions of "useless eaters."

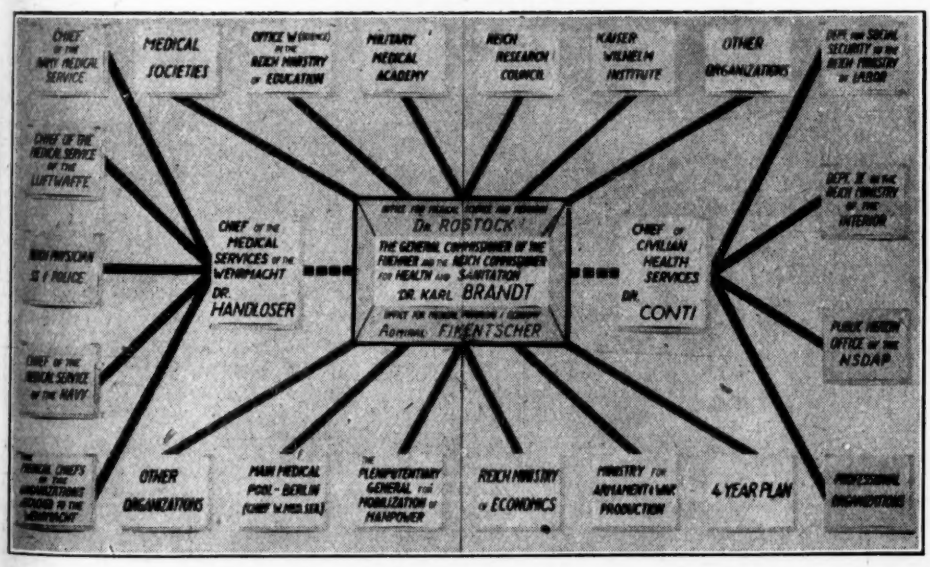
Brigadier-General Telford Taylor, of the U.S. Army, chief counsel for the prosecution, made the various issues clear in his opening speech. He stated that "the defendants are charged with murders, tortures, and other atrocities committed in the name of medical science. The victims of these crimes are numbered in hundreds of thousands." He then stated that the prosecution did not merely wish to punish the guilty for their part in these atrocities, but that "it is far more important that these incredible events be established by clear and public proof, so that no one can ever doubt that they were fact and not fable, and that this court, as the agent of the United States and as the voice of humanity, stamp the ideas which engendered them as barbarous and criminal." The essential point was to show how "the poison of Nazi doctrine" had so corrupted men "exceptionally qualified to form a moral and professional judgment" that they were capable of these acts. It was necessary to demonstrate clearly that it was not a few sadistic criminals who were responsible but that the whole body of organized medicine in Nazi Germany was behind the policy.

The Defendants

There are at present twenty-three defendants in the dock at Nüremberg (see photograph on p. 148). Of these, twenty are medical men of one kind or another, and three were concerned with lay administration. These defendants are, however, by no means the only Germans who might have been indicted. The I.M.T. made it clear that these medical crimes were part of the general policy of the Nazi leaders. Hitler knew about them, and gave his approval and encouragement. But of the better-known leaders it is Heinrich Himmler, *Reichsführer* of the S.S. and later also Minister of the Interior, who was particularly concerned. Himmler eluded the gallows by committing suicide, but his obsessional character made him retain every letter, memorandum, and report, even including scraps of paper with rough notes on them. These documents clearly established his paramount role. He was not himself a scientist, but he took a considerable, though quite uninformed, interest in research. In medical investigations he was constantly urging others on to produce immediate practical results irrespective of the brutalities which might be inflicted. This constant urging from above that "practical" results must be forthcoming, together with the general unscientific temper of the environment, did much to ensure that the experiments were of the minimum scientific value.

Few of the defendants are accused of actually carrying out the experiments themselves; they are mostly the responsible organizers alleged to have planned the

FIG. 3.—Karl Brandt's Web


MEDICAL SOCIETIES
MILITARY MEDICAL ACADEMY
REICH RESEARCH COUNCIL
KAISER WILHELM INSTITUTE
OTHER ORGANIZATIONS
CHIEF OF THE MEDICAL SERVICES OF THE WEHRMACHT DR. HANDLOSER
Dr. ROSTOCK
THE GENERAL COMMISSIONER OF THE FÜHRER AND THE REICH COMMISSIONER FOR HEALTH AND SANITATION DR. KARL BRANDT
Admiral FIKENTSCHER
CHIEF OF CIVILIAN HEALTH SERVICES DR. CONTI
OTHER ORGANIZATIONS
MAIN MEDICAL POOL - BERLIN
REICH MINISTRY OF ECONOMICS
4 YEAR PLAN

investigations. Listening in court one sometimes felt that the prosecution was equally aimed at people who were absent. Thus a Dr. Rascher, who, it appears, was finally shot at Himmler's own order, was concerned with the more revolting experiments on cold and high altitude. The typhus work was carried out by Dr. Ding, who committed suicide after his capture. A Prof. Hirt, of Strasbourg, who has so far avoided capture, was concerned in the Jewish skeleton collection and the poison-gas experiments.

Fig. 2, which is based on a diagram produced by the prosecution, shows the relative positions of the various defendants in the Nazi medical hierarchy. To complete the picture various "absent defendants" are included. The diagram illustrates the curious double pattern of control so characteristic of the regime. The head of every medical department will be seen to be responsible to his own lay chief and also to a medical *führer* who is independent of the administrative head of the department but is himself responsible to some higher authority. The authority of Hitler will be seen to pass down through several channels which divide and then become knit together again in an intricate and all-pervading pattern.

Hitler himself had three main functions—*Reichskanzler*, leader of the Nazi party, and Commander-in-Chief of the *Wehrmacht*. He was therefore the complete dictator, with overall control of every activity in the country. Under him there were the various departmental heads—Keitel over the armed forces, Himmler as *Reichsführer S.S.* and Minister of the Interior, and others less concerned with this trial.

In German medicine the defendant Karl Brandt occupied the paramount position. At the age of 38 he was appointed *Reichskommissar* for Health and Sanitation, directly responsible to Hitler alone. He had direct and complete control over every medical activity (see Fig. 3), and could deal with any department without reference to the administrative head. The defendant Rostock worked directly under him and was responsible for the control of medical research.

The two main branches of the medical services were: (*a*) those of the armed forces under Handloser, responsible to Keitel on the one hand and to Karl Brandt on the other, and (*b*) the civilian services under Conti (who committed suicide), responsible to the Minister of the Interior and again to the ubiquitous Brandt. In addition the S.S., which formed virtually a privileged state of its own, had a separate medical service under Grawitz, another "absent defendant," but he again was subject to Karl Brandt's supervision. The navy, army, and air force each had its own medical service, and the chief officer of each was responsible to his own C.-in-C. as well as to Handloser, who combined his function of chief of the medical services of the *Wehrmacht* with his supervisory capacity over the medical service of the *Waffen S.S.* (the armed part of the S.S., which eventually had some thirty divisions in the field).

"Thanatology"

The prosecution has used the word "thanatology," which they define as "the science of producing death," to describe the experiments. They allege that the object of the majority of the experimenters was not to advance medical science but to produce methods of speedy extermination. This seems to be true of some investigations, in which intravenous injections of phenol and other substances produced death in a few seconds. The work on the effects of poison gas would seem to have been so mixed with the programme of extermination of Jews and others deemed "undesirable" that it is difficult to distinguish experimentation from wholesale killing.

The prosecution has further urged that practically no results of any value were obtained in any of the work. This is a point which needs further study. From what we already know of the typhus work it is clear that a useful evaluation of the various vaccines was obtained; some of these results have already been published.[1] Preliminary studies suggest that the other work may not advance medical science a great deal, for two reasons: first, some of the results, particularly those obtained by workers like Rascher, are so inaccurate that they cannot be relied on; secondly, few of the original records are available, because they were destroyed to prevent their capture by the Allies in order to try to conceal the fact that the experiments took place. Generally speaking there is no doubt that most of the work was badly planned and carried out under conditions where scientific thinking was difficult. The S.S. was responsible for supplying the human subjects, and Himmler was only interested in quick practical results. This constant political pressure must have had a bad effect. Then the victims of the experiments were not the willing co-operators who have taken part as volunteers in so many experiments in this country, in Australia, and in America. They were prisoners, compelled to take part in work which they knew would quite probably mean their death, and if sabotage was possible they looked upon it as their duty.

[1] Ding, E. (1943). *Z. Hyg. InfektKr.*, **124**, 670.

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ANAESTHETIC APPARATUS

NEW SAFETY CODE

The Medical Defence Union has records of many of the fatal accidents that have followed the administration of anaesthetic gases. Recently the Union arranged a conference of interested parties in an attempt to minimize human errors in the use and assembly of anaesthetic apparatus. Ultimately a committee was set up consisting of representatives of the Medical Defence Union, the Association of Anaesthetists, and the manufacturers of anaesthetic apparatus and gases. This committee has put forward a short-term policy which can be effected immediately and which includes proposals for the distinctive marking of cylinders and pipes, for planned storage, and for the selection and instruction of personnel. Its long-term policy calls for a complete system of non-interchangeable connexions for gas apparatus. This will make wrongful coupling impossible, but can be fully achieved only by the introduction and universal use of a new type of cylinder valve, with consequent changes of the apparatus attached to the cylinders. Until such time as this "fool-proofing" can be brought about the risk of a wrong connexion must remain, but a code of practice has now been formulated which should reduce this risk to a minimum.

A British Standard Code of Practice (B.S. 1319:1946, price 2s. net) has been prepared under the authority of the Chemical Engineering Divisional Council in response to the joint representations of the Medical Defence Union and the Association of Anaesthetists. The code relates to gases contained in cylinders for use in anaesthesia, oxygen therapy, and for other medical purposes; to certain features of anaesthetic and gas therapy apparatus; and to gas distribution systems by pipelines in hospitals. The suggested colour scheme for cylinder identification is as follows:

Table of Identification Colours for Medical Gas Cylinders

Name of Gas	Symbol	Colour of Cylinder Body	Colour of Shoulder, where Different from Body
Carbon dioxide for inhalation	CO_2	Upper ⅔ Sea green (B.S. Colour No. 17) Lower ⅓ Black	—
Carbon dioxide with internal tube (for making snow)	CO_2	Sea green (B.S. Colour No. 17)	—
Cyclopropane ..	C_3H_6	Aluminium	Red (B.S. Colour No. 37)
Ethylene	C_2H_4	Mauve	Red (B.S. Colour No. 37)
Helium	He	Brown (B.S. Colour No. 11)	—
Helium and oxygen mixture	$He+O_2$	Brown (B.S. Colour No. 11)	White
Nitrous oxide ..	N_2O	Black	—
Oxygen	O_2	Black	White
Oxygen and carbon dioxide mixture	O_2+CO_2	Black	Sea green (B.S. Colour No. 17) with white neck

The figures in brackets are references to the colours established in British Standard 381—British Standard Colours for Ready-mixed Paints.

It is also recommended that no cylinder should be encased in any covering; that the label encircling a gas cylinder should be printed in characteristic colours with the name of the gas

contained—e.g., in the case of carbon dioxide for inhalation a green label with black lettering—and that the name or the chemical symbol should be stencilled in paint on the shoulder of the cylinder. The same name or chemical symbol should be clearly and indelibly printed on the cylinder valve.

For the visible connecting tubing of anaesthetic apparatus the identification colours should be: oxygen—white; carbon dioxide—sea green; nitrous oxide—black; and cyclopropane—aluminium-coloured tubing with a spiral red line. Pipe-lines where visible should be similarly coloured and, in addition, the compressed airline should be light grey, the vacuum-line primrose, and the spare line "natural (varnished)."

Finally, the code suggests a type of cylinder storage rack which would differentiate the sizes and colours of cylinders. The shelves are slightly inclined so that cylinders removed for service can always be taken from the one side. The remaining cylinders roll down the incline leaving a space on the other side for the insertion of fresh cylinders.

This code of practice marks an important step forward in co-operation between manufacturers and anaesthetists. Its recommendations should be studied carefully by all who have to do with the handling of gas cylinders. Production difficulties are such that the long-term proposals are not likely to be achieved for some time. Till then, the recommendations of this code, if conscientiously followed, will ensure the reduction to a minimum of the present risks.

RESETTLEMENT OF THE DISABLED

PROGRESS REPORT

Up to the late summer the number of disabled persons registered at the local offices of the Ministry of Labour and National Service was 628,000—a surgical group of 289,000, a medical group of 196,000, a psychiatric group of 34,000, and the remainder miscellaneous, chiefly eye and ear defects. The resettlement into gainful occupation of a mass of disabled persons equal to the whole population of Lincolnshire calls for long-continued and enterprising planning. About 100,000 of these people are ex-Service of the 1914–18 war, and therefore veterans; some 5,000 are juveniles; and of the remainder about equal numbers are ex-Service of the recent war and non-Service. Women number about 6% of the adult disabled. All these people are eligible for various resettlement and employment schemes, including the scheme whereby every employer of twenty or more workers must take a quota of disabled persons (at present 3% of his labour force), the scheme whereby certain employments are by order designated suitable for disabled persons, the schemes of local authorities, mostly embracing blind persons, and the home workers' schemes under which those whose disablement prevents them from taking advantage of workshop facilities may carry on work at home.

On the recommendation of the Tomlinson Report, now four years old, a standing interdepartmental committee was set up in 1943 representing all the Government departments concerned, ten in number, including the Government of Northern Ireland, to watch and assist the development of schemes for rehabilitation and resettlement, and it has just issued a progress report.[1] In England and Wales 333 hospitals, or very nearly two-thirds of the larger general and special hospitals, now have active rehabilitation facilities, although in a considerable minority the facilities are only partial—for example, they have remedial exercises but not occupational therapy. In Scotland rehabilitation departments have been developed in the emergency hospitals.

Provisions for Special Cases

Provision for cardiac cases, of which 30,000 have been registered, has been deferred owing to various difficulties, and at the time of compiling the report it had not been possible to set up a special centre. For tuberculosis—pulmonary tuberculosis is given as the disability of 22,000 of those registered—arrangements have been made for close co-operation between tuberculosis authorities and the local offices of the Ministry in finding employment under suitably adjusted conditions for the individual when he is fit to undertake it. More success seems to have been reached in obtaining part-time employment for tuberculous persons than in providing rehabilitation measures. For the deaf—and 19,000 of the disabled suffer from ear defects short of total deafness—the Government is providing a new electrical aid. Under the new National Health Service there will be provided any necessary treatment of deafness, a scientific assessment of the need for a hearing aid and the aid itself and its servicing. Over 32,000 men and 1,500 women are registered in the psychiatric group, and these people will be dealt with by assessment centres—one experimental centre is being set up for England and Wales and another for Scotland—with immediate facilities for employment in the less serious cases and facilities under sheltered conditions for the more serious.

The interdepartmental committee has also surveyed various local or regional schemes. One of these provides special facilities for Scottish miners at the fitness centre in Gleneagles; another is the scheme at the Manchester Ship Canal Docks whereby labourers suffering from minor physical ailments receive medical advice and such reference for treatment as may be necessary. Yet another is the Scottish Supplementary Medical Service, originally confined to the Clyde Basin and to persons up to 25, but now extended to cover the whole of industrial Scotland and persons of all ages. The main object of this scheme is to assist general practitioners in dealing with cases of industrial fatigue by providing consultant and diagnostic services for actual or probable early cases of organic disease. There is no similar organization in England and Wales, but it is considered that existing medical services provide largely for proper diagnosis and early treatment. The time is not considered ripe for the institution of a postgraduate diploma in rehabilitation, but special courses for doctors have been held, training facilities for physiotherapists and occupational therapists have been secured, and a hospital almoner service developed. Under the wartime scheme operated by the Ministry of Pensions Limb-fitting Service about 3,900 civilians have been supplied with artificial limbs. The cases of amputation of one arm or one leg in the register of disabled persons number 41,000, of both arms 370, and both legs 1,277.

Vocational Training

About 67 Government training centres are now functioning in which the training of disabled persons is carried out side by side with the training of the able-bodied. This is considered the best arrangement for the disabled. A wide range of manual or quasimanual occupations, all of them requiring some degree of skill, is listed, and the course of training is rarely less than six months and sometimes nine or twelve. These courses must now have been completed by about 25,000 disabled persons, and a further three thousand have had training for professional, technical, or executive positions.

One important class is the paraplegics, in view of their special limitations and their need for medical supervision. It is stated that the modern methods of treatment and rehabilitation in practice at the Ministry of Pensions Hospital at Stoke Mandeville have shown that the majority of paraplegics are able to undertake remunerative employment under suitable conditions. Further experience is likely to be acquired at two new hospitals which are projected, one in the London and the other in the Glasgow area.

The variety of the disablements themselves, of the occupations into which the people can resettle, and of the schemes for enabling them to do so makes it most desirable that some permanent body should be in existence to secure co-ordination and promote the exchange of information. This interdepartmental committee well fills the role, and we hope it will report upon the subject annually or as occasion requires.

[1] Ministry of Labour and National Service. *Report of the Standing Committee on the Rehabilitation and Resettlement of Disabled Persons*. London: H.M. Stationery Office. 4d. net.

Lieut.-Col. Ashton Street, I.M.S., of Crowborough, Sussex, formerly Professor of Surgery, Grant Medical College, Bombay, who died on Sept. 8, 1946, left £28,184. Dr. John Forbes Campbell, of Totton, Southampton, who died on Aug. 14, 1946, left £11,501.

Reports of Societies

ANAESTHESIA FOR ABDOMINO-PERINEAL OPERATIONS

At a meeting of the Section of Anaesthetics of the Royal Society of Medicine on Jan. 3, with Dr. STANLEY ROWBOTHAM in the chair, a discussion took place on anaesthesia for abdomino-perineal operations. Dr. RONALD JARMAN said that it was now forty years since Mr. Ernest Miles had first performed abdomino-perineal excision of the rectum. Notwithstanding the hesitation with which the operation was formerly regarded by many surgeons, it had proved successful thanks not a little, as Mr. Miles would acknowledge, to team-work. In considering the operation from the anaesthetist's point of view he laid stress on the careful preliminary examination of the patient. The patient was taken into the hospital at least fourteen days before the operation, during which time he had high colon wash-outs. The anaesthetist could at the same time make his own examinations and estimates. In an experience during the last fourteen years of over 1,000 cases of this kind, the speaker had taken a dislike to ether, and preferred for his own use pentothal and gas-oxygen with premedication by omnopon and scopolamine. The patients were put to sleep in their beds with pentothal, taken to the theatre, given "light" percaine, followed by gas and oxygen. Curare could be used with success.

Dr. FRANKIS EVANS said that at St. Mark's Hospital several hundreds of cases had been treated by means of the synchronous combined excision, which permitted the removal of a rectal growth inoperable by the abdomino-perineal technique. In the light of experience the anaesthesia for these operations became largely standardized and his own preference was for a spinal analgesic in combination with a dilute pentothal intravenous drip to maintain unconsciousness. The patient came to the theatre with an intravenous drip in position. The pentothal administration was started and when the patient was unconscious the spinal puncture was performed. When the blood pressure fell unduly low it was an indication for dosage with adrenalin.

A sample of some sixty cases from St. Mark's, twenty treated by the abdomino-perineal and forty by the synchronous combined excision, showed there was very little difference in post-operative complications whether a spinal anaesthetic with gas-oxygen or a spinal with pentothal drip was used. The mortality in this series with the abdomino-perineal operation was about 9.8%, and with the synchronous combined 8.1%, but it must be borne in mind that the cases were very bad risks. Curare had been tried in one or two cases, but these had been found to bleed considerably and appeared to be more shocked than patients who had had a spinal anaesthetic.

REHABILITATION FOLLOWING CHEST SURGERY

At a meeting of the Section of Physical Medicine of the Royal Society of Medicine held on Jan. 8, Mr. HOLMES SELLORS said that the circumstances favouring rehabilitation were better in chest surgery than in general surgery, if only because the treatment of chest cases was carried out in institutions where the general tempo of life was more like that of a sanatorium than of a busy city hospital. In chest work the aim was to keep the patients in hospital until they were ready to return practically to a normal life; thus the hospital was likely to be more spacious and of the "green belt" type. The cases were long-term; there were some which stayed only four or five weeks in hospital, but the difficult ones with chronic empyemata, and those which developed complications, might be kept in for months, or perhaps up to a year. Some of the investigations, such as those for tuberculosis, took a long time, and during this period a great deal could be done, by teaching breathing exercises, to prepare for the post-operative course of treatment.

Diet had to be considered, as in the suppurating case the loss of protein over a term of weeks might be quite considerable. The most difficult problem was the psychological one of the patient in hospital, for as he improved he became restless and later apathetic. The importance of the economic side had been recognized in tuberculosis by the system of allowances, but not to the same extent in chronic chest cases. Occupational therapy was still at its beginning and had not received enough attention.

The medical aspect of rehabilitation resolved itself as a question of chest function. The best example of the long-term case was the chronic empyema in which there was usually deposited a mass of fibrin over the pleural surfaces, surrounded by an unyielding contracted chest wall. Secondary scoliotic change, often including wedging of the vertebrae, was the appalling deformity seen too often as a result of maltreatment of the acute phase of the empyema.

Chest Exercises

The underlying lung worked more or less *pari passu* with the chest wall. It was almost an aphorism that with an actively moving chest wall there was reasonable lung function. The basis of treatment was to get the chest wall moving and to prevent any structural deformity from developing. The type of breathing exercise required was thus based on inspiration and not expiration. These inspiratory exercises were new, but physiotherapists who had developed them had demonstrated that they were of inestimable value. The first secret was the teaching of concentration. It was of no use to have breathing exercises for just ten minutes every morning. The patient should be told that of the twenty-four hours of the day, eight were sufficient for sleep, eight for meals and play, and the remainder should be devoted to sedulous training in breathing. He should be taught localized inspiratory exercises, working against some form of resistance which enabled him to concentrate his mind and activity on the area of the chest it was desired to move. The chest might be divided into its various functional parts in relation to movement. In empyema it was generally the basal expansion which was an important movement to regain, and such control must be established by the patient. By careful concentration it was possible to move one area and one area only by voluntary effort. The other movements concerned were lateral movements, an attempt to get posterior expansion, and, finally, a ripple almost along the antero-posterior line.

After the general exercises it was very important to see that the stance of the patient and his position in bed were correctly maintained. Subjects had a tendency to avoid discomfort in bed by cramping-in on the bad side of their chests, which actually made them worse and tended to exaggerate all the defects which it was sought to remedy. Unless there were contraindications the patient should be got out of bed as soon as practicable, as by his moving about his general recovery was encouraged. Effective coughing for the clearance of noxious secretions from the lung was desirable, as otherwise the patient was liable to atelectasis and further inflammatory changes.

Occupational Therapy

So far as occupations other than breathing exercises were concerned, leather work and toy making had proved their value perhaps more in the case of women, as men were less inclined to take to these simple occupations. These activities must not be allowed to become an obsession, though occasionally, as in a great many military cases, they might open out a new permanent occupation for a patient whose disability did not permit his return to his ordinary means of livelihood. In the late stages those attending the patient must avoid any tendency to let the posture become set, as they needed to walk comfortably. It was not easy to achieve a really high degree of functional recovery with satisfactory vital capacity in these patients, and it was necessary to make liberal use of the services of the physiotherapist.

At the annual general meeting of the Harveian Society of London, held on Jan. 15, the following officers were elected for 1947: *President:* Macdonald Critchley, M.D., F.R.C.P. *Vice-Presidents:* A. Wallis Kendall, M.S., F.R.C.S.; J. H. Peel, F.R.C.S.; John Hunter, C.B.E., *M.C.*, F.R.C.S.; W. Eldon Tucker, F.R.C.S. *Honorary Treasurer:* Sir Cecil Wakeley, K.B.E., C.B., D.Sc., F.R.C.S. *Honorary Secretaries:* Peter Turtle, M.B.; Rodney Smith, M.S., F.R.C.S.

Correspondence

The Presidents and the Minister

SIR,—The letters between the Presidents of the Royal Colleges and the Minister (Jan. 11, p. 66) get us nowhere. The Act *in its present form* is anathema to the bulk of us by reason of certain of its provisions which enslave the patient and insult the profession. It was forced through Parliament in this form by Mr. Aneurin Bevan. It gives him more absolute authority than any man in peace has had since Cromwell. He can, on the plea of national health, prohibit beards or make cremation compulsory, and is answerable to nobody but Parliament. He can dodge that by saying that it is "not in the national interest" to say why he so acted.

His answer that the salary basis is to help the profession is just soft soap and eyewash. The Lord Chancellor stated emphatically that it was to control medical certification.—I am, etc.,

Newton Ferrers, Devon. W. F. BENSTED-SMITH.

SIR,—It is with misgivings that one reads of conversations between the Presidents of the Royal Colleges and the Minister of Health. An impasse is to be deplored, but is not of our making. The one thing above all others upon which the Minister insists is the one thing above all others which makes it fundamentally impossible for the profession to negotiate with him—i.e., his power of dictatorship, to issue edicts and make rulings from which there is no right of appeal to the courts of justice.

It is utterly futile to attempt to negotiate with a dictator because any apparent "concessions" he may make can be rescinded at his own sweet will. This determination to by-pass the judiciary and render impotent the Common Law of England is apparent not only in the N.H.S. but in all the new laws being passed. In the farmers' sphere our "Willesden affair" has its even more glaring counterparts in the Odlum versus Stratton and Miller versus Essex War Agricultural Executive Committee cases, which provide us with samples of what we may expect under bureaucratic dictatorship. The medical profession is in the forefront of the defence of British freedom against the onslaught of the National Socialist State, and we have a moral duty to the public in general as well as to our patients in particular to stand firm.—I am, etc.,

St. Germans, Cornwall. W. H. SPOOR.

SIR,—The letter (Jan. 11, p. 66) to Mr. Bevan in which three distinguished consultants have expressed the hope that negotiations about the Health Act between the doctors and himself will be continued appears to be written without recognition of three vices inherent in the Act. The writers seem to have turned the blind spot of their vision upon them.

The G.P.s have declined to negotiate. One does not negotiate about vices. I wish to refer to one of them. It is the payment by salary. Why does Mr. Bevan stipulate this? It is a feature which vitiates the age-old relation of patient and doctor. In Mr. Lloyd George's Act he skilfully avoided such a desecration; the panel system preserved the individual freedom of both parties, patient and doctor, but payment by salary destroys the ethic which two thousand four hundred years have built up. The doctor is to be paid by his master, who will be the State, not by his patient. *Ipso facto*, despite denials, he becomes a state servant. A private doctor, under the Hippocratic tradition, owes his duty to the patient alone.

Why does Mr. Bevan wish for this change? It was not in the first instance his suggestion, but it arose from the Beveridge report. Sir William Beveridge (as he then was) disclaimed interest in the medical services of the scheme except in this, that the doctors must be so paid that in a system affording the large benefits proposed the certification must be safeguarded by the method of their payment. "Safeguarded"? That is the toad, ugly and venomous, which lurks in the leaves of the Beveridge report. Its reappearance in the Act is one of the three vices which render that statute unacceptable to the G.P.s.

Their tradition is that they certify their patients' illnesses upon their conscience and their professional knowledge, uninfluenced by any extrinsic considerations. They see in this salary an unblushing inducement to deviate from their duty, which begins and ends with the certification of the truth. No single action of the legislature could more effectively shatter the mutual confidence of doctor and patient. Safeguarding the State's finances is not the doctors' concern. Doubtless consultants will seldom be called on to confront such a problem, as is the G.P. many times a day. That may explain the blind spot in the vision of Mr. Bevan's three correspondents.—I am, etc.,

Holmes Chapel, Cheshire. LIONEL JAS. PICTON.

SIR,—The recent unilateral action of the Presidents of the Royal Colleges in approaching the Minister of Health without consulting the profession is to be most seriously deplored. We regret to have to describe their action as autocratic, unrepresentative, and, in effect, an abuse of Office.

The Royal Colleges are not democratic bodies. Their constitution is that of autocratic corporate bodies. Nevertheless, in a democratic age the Colleges should adopt democratic methods, thereby enabling Fellows and Members to voice their opinions through properly elected representatives. Presidents of corporate bodies are not necessarily chosen because they share the majority opinion on medico-political matters; but rather for their personal popularity and prestige. In the present crisis between the Government and the medical profession it is not unreasonable to suggest that these three distinguished men are representing themselves and, possibly, their Councils, consisting of a total of about 100 general practitioners. Moreover this step has apparently been taken without consultation with the B.M.A., which represents 52,000 medical practitioners including a large number of Fellows and Members of the Royal Colleges.

Medical practitioners are naturally astonished that this undemocratic step should have been taken by three responsible men who have duty to the profession and public. Perhaps one may be permitted to ask whether the Presidents have been lured by the politically inspired call for "statesmanship" by *The Times* (a newspaper which seems to have developed into a Government organ travelling under a Tory label). Should this be the case, then we have an impending "Medical Munich."

This unprecedented action taken by the Presidents, which is liable to sabotage the results of the plebiscite, has filled practitioners with alarm and created a serious lack of confidence in the Royal Colleges in their assumed role as leaders of medical policy.

It is hoped that the B.M.A., as the representative and recognized negotiating body of the profession, will adhere unswervingly to the clear mandate given by the majority of private medical practitioners.—We are, etc.,

W. B. Smellie,	P. C. Alexander,	Mary Turnbull,
W. C. D. Maile,	K. J. L. Scott,	N. K. Stott,
W. D. Henderson,	Stuart Hayes,	J. M. S. Evers,
F. J. Beilby,	J. B. Cargin,	J. W. C. Symonds,
L. G. Higgins,	Isobel Mitchell,	Tudor Miles.

SIR,—The President of the Royal College of Surgeons asks for the forgiveness of the Minister of Health for his intervention. Surely the trespass has been committed not against the Minister but against that special meeting of Fellows gathered in that crowded hall on Nov. 29, and to whom he pledged that the Royal College of Surgeons would take no action that was not in accord with the wishes of the main body of the profession. Indeed, he may not have acted contrary to the "word" of this resolution, but it would seem that the intervention is contrary to its "spirit" and to the wishes of that meeting and that majority which has said "No."

Let us hope that this action will not render the result of the plebiscite worthless, as some would wish, and that the B.M.A. Council and those who give the mandate to the Representative Body will have no difficulty in washing away the dust which may have got into their eyes, so that they can see that Mr. Bevan is still only prepared to negotiate "within the Act," and will only endeavour to meet any views of the profession which do not conflict with the principles of the Act. It is because of

these differences in principles that the majority of the profession has said "No."

Let us then unite and support to the full the Council of the B.M.A. in the decisive action it took on Dec. 11.—We are, etc.,

CYRIL E. BEARE.
ANTHONY GREEN.

London, W.1.

The Principles of the Act

SIR,—A good deal of interest and curiosity must have been aroused throughout the profession by the publication (Jan. 11, p. 66) of a letter addressed to the Minister of Health by the Presidents of the three Royal Colleges. However this may be, the Minister's reply does not alter the situation one iota. "If discussions take place, I shall endeavour to meet any views of the profession which do not conflict with the principles of the Act." So says the Minister; discussions are like cobwebs—to catch flies; but the power is in the law, and there's no disputing with it but upon the sword's point.

What are the principles of the Act? The Government is set on nationalization. In order to establish its policy it is bound to bring medical practice under its control. The final arbiter on all matters medical, surgical, gynaecological, or otherwise is to be the Minister of Health. The medical man is no longer to be his own master; on the other hand he is to have a master. Those are the principles of the Act. The spectre of State dictatorship faces us; our freedom is threatened. It falls to our lot, therefore, to oppose with all the energy at our disposal the evil forces which confront us. If the liberty which is ours is seized by those with greater zeal, greater unity of purpose, whether based on ignorance, class prejudice, or mere political ambition, then woe betide us. The character of our profession as a corporate body is on trial. We have said "No." It remains to show that we mean it, whatever the cost. Let it be understood that the struggle we are entering is not confined to the defence of our own liberty but is part of a much wider struggle in defence of the liberty and individualism of the whole British race.—I am, etc.,

H. M. HOLT,
Medical Officer of Health

Keighley, Yorks.

Democratic Choice

SIR,—The other evening I listened-in to the broadcast on the "Vesting Day" for mines. I notice how anxious the powers that be were to emphasize that the miners would be consulted via their democratically *elected* representatives. I should like to know why the medicos who are expected to work the Health Act are not to be consulted; and their representatives are *appointed* by the Ministry, not elected.

As regards the "closed shop," I remember that in the early days of trade unionism some employers would not allow their men to join trade unions. This was described as tyrannical and narrowminded. Is not the "closed shop" movement exactly the same thing from the other point of view? Let us be free men and masters in our own home.—I am, etc.,

E. HAYLING COLEMAN.

Wolverhampton.

Women Doctors in the Health Service

SIR,—Dr. Enid A. Hughes, in her letter (Jan. 11, p. 71), writes that provided her living is secured and her professional integrity assured she is not going to stand upon the question of salary and selling of practices. She voted "No" in the recent plebiscite as an expression of no confidence in the present committee to represent the present generation of doctors.

I would ask her and all medical women who hold her views to consider very seriously what the future of women in medicine is likely to be in a National Health Service under the present Act. We know that a recent committee was set up to go into the question of equal pay for equal work as regards men and women, and we know its findings. Once the shortage of doctors is overcome what guarantee have we that women doctors will not be asked to accept lower fees than men? Then we will be servants of the State and no longer free. *Vestigia nulla retrorsum* (no footprints backward at the lion's den).

It is not to any Government nor to local authorities (a thousand times no) that we owe the recognition of equal status with men in medicine, but to the British Medical Association, which (once it saw the light) has stood firmly and consistently for equal pay for equal work. And it is to those members of the Association—men and women—over 65 to whom we owe most. They sowed the seeds of the harvest we now reap. Have we the right to scorch the earth for those who come after? I would venture to remind Dr. Hughes that she would have had no vote at the recent plebiscite and no future in medicine were it not for these older members of the Association whom she derides.—I am, etc.,

FREDA NEWMAN.

Marden, Kent.

National Health Service Act

SIR,—It is abundantly clear that the National Health Service Act gives the Minister of Health complete personal power over the whole health service of the nation—that is to say over the hospitals, their management committees, and regional boards, and, most important of all, over the personnel of the Service. What power!

Will the members of the medical profession agree to work in a Service in which they are under the autocratic control of a Minister? They can hardly do so, and if they do they will lose their independence and become subservient creatures. By this deterioration and degradation of their doctors the people will suffer.

The blight of prospective Ministerial control is already affecting the attitude of us doctors. We begin to feel like lambs brought to the slaughter. Some of us are beginning to be afraid to say much lest we should earn a bad mark. The recent letter from the Presidents of the three Royal Colleges addressed to the Minister of Health illustrates this attitude. It deals with details rather than principles, and it ends with the obsequious phrase, "We hope you will forgive us for intervening." And so we doctors are being gently led by our leaders into a completely humiliating position. The Presidents of the Royal Colleges are simply selling the birthright of the medical profession, and the people will suffer.

At the meeting of the Marylebone Division of the B.M.A. held on Jan. 14, the following motion, originally resolved by the Council of the B.M.A., was carried by 143 votes to 9:

> "That the Negotiating Committee be advised that in view of the results of the plebiscite the Minister be informed that because of the divergence between the principles of the profession and the provisions of the National Health Service Act, the Committee is unable to enter into discussions with the Minister on the Regulations to be made under the Act."

In a subsequent resolution, which was carried with only five dissentients, the meeting expressed willingness to co-operate with the Government and anticipated that this co-operation would require new statutory action by the Government.

This matter of Ministerial control, this "terrific centralization of power in one man" as Lord Horder said when the Bill was debated (second reading) in the House of Lords, is a matter of principle and one on which the whole profession should be asked to vote. It is a simple issue, and it is maintained that the Act must be modified at least in this respect if good doctors are to work in the new Service.—I am, etc.,

GEOFFREY EVANS.

London, W.1.

SIR,—I believe that Mr. Reginald Payne (Jan. 18, p. 102) has performed great service in writing and you, Sir, in publishing his dispassionate survey of the National Health Service Act against its background of present-day legislation by the State. Those who read this, whether within or without the profession, if their integrity be accepted, can have few doubts as to the future.

One must set aside those whose political views render them incapable of unbiased judgment, but there remains that surprisingly large section of the community who indulge either in muddled or wishful thinking or whose power of reasoning is distorted by misapplied sentiment. It would seem well-nigh inconceivable that these individuals can blind themselves to the futility of negotiation with the Minister over details within the framework of the Act, which can be only trivial in the light of the grave injustice which has become law. To do so will shift the responsibility for its overwhelming defects squarely upon the shoulders of the profession, and those who allow

themselves to be gulled by the honeyed words of the Minister are doing a disservice both to the profession and the public, and must lay themselves open to the charge of seeking self aggrandizement.

The alternatives before us now are clearly defined: to uphold freedom of the individual against tyranny or to acquiesce in the serfdom of a totalitarian state. If any other warnings need be sought other than those expressed by Mr. Reginald Payne, let the unconvinced seek out his edition of Plato's *Republic* and read what that great philosopher wrote of his time.—I am, etc.,

Windsor. CHARLES TAIT.

SIR,—May I express my admiration for Mr. R. T. Payne's article (Jan. 18, p. 102) and my gratitude to him for his lucid and factual presentation of his case. It is inconceivable to me how any intelligent person can read this article and have any doubt left as to the essentially authoritarian basis of the National Health Service Act.

Like Mr. Payne, I have read with care Dr. C. K. Allen's book, *Law and Orders*, and like him I have no pronounced political views, and I am as anxious as anyone to see a democratic health service established. Mr. Payne has expressed my own views, and the views of many of my colleagues with whom I have spoken, with a clarity and a felicity of expression which I could never hope to equal. In my ignorance I do not know what high office he holds in the counsels of the profession, but obviously he is a leader we would do well to follow, as he knows his facts, is quite without prejudice, and has the ability to convince the wavering and instruct the uninformed.—I am, etc.,

Southport, Lancs. R. R. M. PORTER.

SIR,—There appears to be a great deal of loose thinking in the matter of whether opposition to the Health Act is or should be political. Surely the answer is clear enough. The question *is* political, nor can it be otherwise, as it deals with objections to a method of government by a political party. The sneer that opponents are actuated by political motives can only be justified if we are voting against our consciences to further political aims. I venture to say that the profession does not in general act in this manner.

May I refer for a moment to my own attitude as an illustration, I think, of an average reaction. I hold that a sincere political belief is largely ethical—i.e., it must be in support of the party which is most likely to carry out what we believe to be best for the people of our country. I am cynic enough to believe that most M.P.s of all parties are not living up to their expressed utterances or even in fact to the ordinary standards which we expect of those whom we meet in everyday life and would make our personal friends. So I vote for the party which I consider more likely to carry out my own personal wishes in legislation, and that usually happens to be the Conservative Party. I was not in the least pleased with Mr. Churchill's action in launching a Health Service Bill while the war was still on and the profession far too busy with war work to give any time to serious consideration of the shaping of such a Bill; and I doubt whether we could have been sure of getting our minimum requirements for our patients and for ourselves from the Coalition Government; but we were at least invited to discuss and negotiate in the preliminary stages. The Labour Government has refused to consult us before the passing of the Act; so we are fighting a political battle willy-nilly, and fighting it as anti-Socialists in this respect.

When I read the last paragraph of Dr. Cardew's letter in your issue of Jan. 4 (p. 29) I realized that we are even in your columns being treated to the typical oratory of the soap-box. The unctuous assumption that he possesses all the virtues and that we, poor inhuman wretches, have been grinding the faces of the poor for years is just such typical nonsense and might so easily have emanated from Transport House. Surely Dr. Cardew has something more intelligent to say than this. Perhaps he will come down to brass tacks and tell us frankly what he thinks of Willesden and of the "absent treatment" by medical men in the Ministries of Dr. Foxell's Birmingham patients. *These* are the vital things we are up against and must settle before it is too late. After all, quite a proportion of our profession still does put the patient first and resents oily Socialist advice on how to be kind to humanity.

So may we not clear the air a bit by acknowledging frankly that this is a political struggle and that we are rather hypocritical when we emphasize that the other man is holding honourable and sincere views, etc., etc. It sounds nice and broad-minded, but we just don't think it's honourable to deprive a dying person of what is necessary for his comfort and existence at the behest of stupid people in Whitehall. We *don't* think it's just a naughty, mischievous action to try to discharge the staff of a hospital (desperately badly needed) to please the trade unionists who are running this Government; and we are fighting the Act because we see, if we have any intelligence, that these things are just those that can occur much more easily under the Act, and undoubtedly will.—I am, etc.,

Maidenhead, Berks. A. DANGERFIELD.

SIR,—I have just seen the pamphlet issued by the British Medical Association entitled *Your Doctor or the State's Doctor, Which Do You Want?* As an ex-member of the Indian Medical Service I wish to protest at the travesty of the facts contained in the pamphlet regarding medical officers of the Forces and the medical treatment of Service cases. The first duty of Service medical officers is to prevent disease, and secondly to provide treatment for sick and wounded. The object of the latter is to return their patients to duty as soon as possible compatible with the interests of the patient. They are definitely responsible for and also to the patient. They certainly are responsible to their superior officer in the same way that a house-surgeon or registrar is responsible to his chief.

Regarding promotion and pay increases: length of service is the main factor where the medical officer is in every way suitable, but annual confidential reports are the main basis on which accelerated promotion and specialist appointments are made. These confidential reports must be seen and initialled by the officer reported on immediately after initiation and again when higher authority has made any remarks. The medical officer has the right to query any remarks on his report which he may consider adverse.

I take particular exception to the remark in the pamphlet: "but for minor complaints and worries the prescription of a No. 9 pill and the command Dismiss!" This is a libel on Service doctors as it would be on private practitioners, from whom Service doctors are drawn. I wonder if the writer of these remarks dates back to the South African war, when, I understand, there was a ditty sung to the tune of "Clementine" as follows: "Every ailment from a veldt sore to a dislocated spine can be cured, in a moment, by a dose of No. 9." I also consider the remarks, "The task of the Forces doctor is to make all ranks fit for duty and to protect the Pensions Fund" as most unjust. The medical officer's duty is to keep all ranks fit as far as possible and, in questions involving pensions, to give his true opinion, based on medical grounds.—I am, etc.,

Newmarket, Suffolk. W. L. WATSON, Colonel, I.M.S. (retired).

SIR,—Modern methods of propaganda, especially when they are used in conjunction with what Douglas Reid calls "infiltraition" [*sic*], can accomplish almost anything. The rape of Czechoslovakia, which was Munich, was greeted with widespread rejoicings in the House of Commons; there were few dissentient voices. It was not until Hitler had completed the dirty work that public opinion was "profoundly shocked."

History repeats itself. Our profession has been divided and inexorably lured to the very brink of the Gadarene slopes, and now the final softening-up process is in full swing. There is a glut in red herrings, and many of those who voted "No" and intended to stand firm are being swept off their feet as yet another minority attempts to impose its will. The recent action of the Presidents of the Royal Colleges is hailed by the *Yorkshire Post* as "statesmanlike" (though other names have been given to it); *The Times* nods her venerable head in approval, and even the *Daily Mail* says that "the doctors will make a great mistake if they do not accept the Minister's invitation to

negotiate concerning their objections *within the framework of the Act.*"

If our objections could have been met within the framework of the Act, why the plebiscite? Surely those of us who voted "No" did so because we believed that the Act itself required amendment in certain vital aspects. That situation has not changed at all, though there seems to be a conspiracy to make everyone believe that it has. The future well-being of our profession and of those we serve is at stake; it lies most assuredly in our own hands if we will but stand by our principles.—I am, etc.,

Hessel, E. Yorks. R. HERMON.

National Service for Health

SIR,—Dr. H. B. O. Cardew (Jan. 4, p. 29) refers to the Labour Party publication called *National Service for Health* and states that the Act in no way conflicts with this announced statement of policy. This is a matter of opinion, since different people anticipate the results of the Act in different ways.

There can be no doubt, however, that in one important respect the statement of policy in that publication is directly at variance with a statement made on behalf of the Government in the House of Lords during the debate on the Bill. The booklet states on p. 18: "In the Labour Party's opinion, therefore, it is necessary that the medical profession should be organized as a national, full-time, salaried, pensionable Service." In the House of Lords the Earl of Listowel, the Postmaster-General, used these words: "It was not and never had been the policy of the Government to institute a full-time, salaried medical service, or indeed to do anything else that would wreck the whole health scheme from the outset." Perhaps Dr. Cardew would like to try and explain these diametrically opposed statements, which he has apparently preferred to overlook.—I am, etc.,

Hungerford, Berks. D. H. STUART BOYD.

The Act and Freedom

SIR,—We have, thank God, won the first battle for freedom, but many of our profession still seem to think that the new "Health Act" is a measure about health. This is a fundamental mistake. The title is entirely misleading. The real object of the Act is complete political and economic power over the profession, hospitals, and patients. It is a major part of a vast scheme for planned control of the nation and of every individual in it. Already our liberty is immensely curtailed compared to what we had ten years ago; and month by month our freedom in all directions is being diminished.

We, the medical profession, are now the strongest and biggest obstacle to State domination and State control. We must stand firm. We must insist on every one of the objectionable clauses in the Act being dropped completely before we will work under the Act, or insist on a new Act without any such clauses being brought forward.

The B.M.A. has done well, but only at the last. Much more publicity and information should be given at public meetings in the towns and in the Press. "Only be strong and very courageous." We must act with persevering courage and confidence. We have the power, and if we use it now to throw out this infamous and un-English Act we shall have struck a major blow for freedom. We shall have begun to win back liberty not only for ourselves but for every man, woman, and child in England.—I am, etc.,

Winchester. SYBIL TREMELLEN.

Medicine and the Ministry of Food

SIR,—As a pathologist I was very interested to read in the *Journal* of Jan. 11 (p. 69) that the advisers of the Ministry of Food had furnished Dr. H. Foxell with the following information: "Our advisers are of the opinion the pernicious anaemia is completely controllable by modern therapy." It would seem, therefore, in view of this information, that I have discovered a new disease, rare enough I agree, which consists of a macrocytic anaemia associated with gastro-intestinal disturbance, subacute combined degeneration of the spinal cord, and the bone marrow of an Addisonian type of pernicious anaemia, which gives little or no response to liver or any other form of modern therapy.

During the past few weeks I have spent some time reading the current English, American, and Russian literature dealing with the relationship between protein deficiency, in particular deficiency in amino-acids, and macrocytic anaemias in general. Perhaps I have been wasting my time and should await further bulletins from the Ministry of Food.—I am, etc.,

Southport, Lancs. JOHN H. HANNAN.

The Plebiscite

SIR,—At a meeting of the West Sussex Division of the B.M.A. on Jan. 12, I was amazed at the confusion which exists among doctors about the plebiscite. Many, like myself, had voted "Yes" and were not at all clear whether this implied approval of the Act as it stands or approval of negotiation. To my mind the plebiscite has tended rather to confuse the issue and has divided the profession into three, and not two, groups: (*a*) those in favour of the Act as it stands; (*b*) those against the Act as it stands, but in favour of negotiation; (*c*) those against the Act and against negotiation on it. There is no means of telling what proportion of those voting "Yes" fall into group (*b*), and my impression from this meeting was that this proportion was high. It is important for the Minister and the profession to know this proportion as it will profoundly influence what action each should take.

The Minister and the profession are each endeavouring to create a comprehensive medical service which will be in the best interests of the public. It does seem a great pity that all negotiation between them should cease. What the profession has expressed is not a refusal to negotiate but a refusal to negotiate on the Minister's closed terms—the Act as it stands. In his latest letter Mr. Bevan has adopted a more conciliatory tone, but can still only negotiate within the terms of the Act. The percentages in the plebiscite show that it is the general practitioners who need to be conciliated. May I suggest to the Minister that the most thorny point remaining would appear to be the goodwill of their practices. If the Minister is sincere about the points he has raised in his letter, including appeal from the decision of the tribunal, then it should be possible to reach a compromise.—I am, etc.,

Chichester, Sussex. JOHN D. WHITESIDE.

SIR,—The voting in the recent plebiscite indicates that the majority of doctors under 40 are in favour of negotiations, while a majority of those over 40 are against. It would be interesting to know what proportion of delegates at the forthcoming Special Representative Meeting belong to each of those age groups. The discrepancy between the result of this vote, with its narrow majority in favour of suspending negotiations, and the overwhelming majority vote against the main principles of the Act at the last Representative Meeting needs some explaining. I believe that the older age group is in a large majority at those local meetings where the representatives are elected. I cannot think of any other explanation.

Recent experience has shown that to get us anywhere we need a 90% backing of our members. We have not got this backing in this matter, and I believe that this small majority vote does not warrant the suggested action of Council, which will only succeed in splitting the profession and will get us nowhere.—I am, etc.,

Nelson, Lancs. T. D. CULBERT.

SIR,—Most of my medical service has been performed abroad where I have learnt to appreciate virtues other than British, but such racial pride as I possess is founded on my kinship with the millions of sturdy men and women who have made us what we are, with the "village Hampdens" as well as with the Cranmers and Cromwells, Miltons and Bunyans, Wesleys and Wilberforces of British history. Can we not then consider the subject of the plebiscite purely from its ethical aspect? Is this Act such as our fathers would have laid down their lives for? Surely it hasn't come to this, that we must ask how others will vote or act before we decide to stand by or reject principles? What has the crowd to do with my conscience?

Let us have unity by all means, if we can win men to forget self and serve only the best. Men may accuse us as they like, but, as many of us see it, we face a crisis in our national

life. If freedom to treat the sick in the time-honoured personal way, regardless of time and strength and cost, is to be sacrificed to soulless regimentation, then a big step will have been taken away from the freedom of the personality for which thousands have suffered and died. A national Service, yes! Equality of treatment, yes! But not at the price of becoming robots.

There seem to be three main streams of thought represented in the correspondence; the political, the selfish, and the altruistic. Can we not all seek to join the last, or at least keep the plane of discussion above selfish or party levels?—I am, etc.,

Liverpool. FRED. R. CRADDOCK.

A Realist Considers the Plebiscite

SIR,—Whatever the plebiscite may or may not have done it has at least shown that most of us are in medicine to get the best living we can out of it. The majority of the consultants vote "Yes" because they see private practice remaining *in statu quo*, and a chance of getting paid in the future for doing what they do now for nothing. Those employed in public health work and municipal hospitals vote "Yes" because they don't see how they can be any worse off, and they might possibly gain something. The G.P., seeing before him the swings of decreased income and control increased to potential tyranny—but no compensatory roundabouts—votes "No." Then he shrugs his shoulders, grabs his bag, and trots off to his branch surgery.

Now that the pietistic twaddle recently so freely spewed about the Press has been debunked, let the Minister realize that we are a body of craftsmen ready and anxious to do a decent job for decent pay and decent conditions of service. Let him now put forth some definite and positive offer in respect of (*a*) remuneration, (*b*) compensation, (*c*) working hours, instead of the hideous blackmail of: "If you don't sign on the dotted line on the proper day you get nothing." Failing this let him huff and puff and threaten to blow our house down as much as he likes, while we will continue our work as in the past, fortified by the knowledge that no service can be implemented without the co-operation of the poor G.P.—I am, etc.,

West Wickham, Kent. F. M. SANDFORD.

Amending the Act

SIR,—Acts are made by Parliament, but the regulations are made by the Ministers concerned. To alter an Act needs the assent of Parliament, whereas the Minister can alter his regulations at will. The three Presidents in their letter to Mr. Bevan (Jan. 11, p. 66) state that "the implications of some of the proposals for the new Service are not clear to the profession." The specialists may be confused, but the majority of G.P.s are not, although both need very definite reassurance from the Minister. Mr. Bevan's answer is crystallized in one sentence of his reply: "I shall endeavour to meet any views of the profession which do not conflict with the principles of the Act." Put clearly this means that he is eager to negotiate about the regulations—i.e., the details, furnishing, and trappings of the measure—but is not prepared to take any steps whatever to remove the bars and padlocks on the structure of the Act which make it a potential prison for the freedom of patient and doctor alike.

If the B.M.A. therefore decides that it would be futile to enter into discussions on regulations and details while the majority of doctors are opposed to the very structure of the Act, then the Association has three courses open to it (one of negative inertia and two of positive action):

(1) Let the Council of the Association state (*a*) whether it proposes to let matters slide in the belief that the ballot results indicate that the profession will not work the Act, or (*b*) whether it realizes that matters have gone too far (particularly with regard to hospitals) to regain the *status quo*.

(2) In the latter event the Council should take action by obtaining the detailed opinion of the profession on the seven principles at stake, then in consultation with the best legal advice work out such *amendments to the structure of the Act* as would enable the profession as a majority to co-operate wholeheartedly in working such an amended Act.

(3) Having mapped out such amendments as are essential to satisfy the majority of the profession both from the doctors' and the patients' viewpoint, the Council should then employ the ablest journalists and publicists to put the profession's view before the public and thus pave the way for an amending Act.

It would be far better to make a voluntary levy of 10s. per member in the immediate future to provide some £20,000 for a "fighting fund" to finance the above projects and ensure a successful Health Act, rather than wait for the enforcement of the present Act as it stands and then make a levy of £25 per member for a "failure fund" to assist those who will be hard hit if they stay outside a bad service on questions of principle.—I am, etc.,

Dereham, Norfolk. E. IVIMY PUDDY.

Disunity in the Profession

SIR,—The medical profession is at present wasting a great deal of breath, temper, and time in discussing whether or not it should negotiate with the Minister of Health. Anyone who is familiar with the present trend of opinion among Service doctors and—more important—students knows that, as with the Lloyd George scheme of 1911, the Government, determined to bring in the system, will find or create doctors who will work it, no matter if the B.M.A. negotiates, refuses to negotiate, or stands on its head. The medical profession is—let us face it—woefully disunited, and this disunity is at the root of our troubles; for while other groups of working men have been, for the past few decades, steadily improving their pay and conditions by corporate action and collective bargaining, the medical profession has secured scarcely any improvement at all. Indeed, having regard to the increased taxation and cost of living, one may say our material prosperity has probably declined.

If the doctors were to unite in a single, universal trade union (based at any rate upon the B.M.A.), they could enormously improve their pay and conditions within a few years. Think of it: six weeks' holiday with pay every year, a 40-hour week, a secretary for every practitioner, retirement with pension at 55 or 60. We might even force local authorities to pay nurses almost as much as shorthand typists. There would be no need to worry about "public sympathy with our demands," any more than the lorry drivers or coal miners do.

One realizes of course that the present generation of doctors are not likely to act together in this way. Many would altogether object to the principles involved; some are too shortsighted; some are too lazy. But it does seem that doctors of the future may smile as they look back upon this present pointless struggle.—I am, etc.,

Crowthorne, Berks. GERALD O'GORMAN.

Foretaste of Control?

SIR,—I beg space to make comment on Dr. Wilfred Harris's letter (Jan. 11, p. 69) on the subject of the Ministry of Food's reply to Dr. Foxell's request for extra fat for his now posthumously famous patient. Dr. Harris would seem to maintain that whereas in this case the Ministry was fatuous in its reasons for refusal, he would regard it as more sane if a panel of experts, advising about a patient they had never seen, refused what was required to maintain life on the grounds that life would in any case terminate shortly, even with the extra nutriment recommended by the attending physician. I do not know how Dr. Harris would reconcile this sentiment with the spirit of the Hippocratic Oath or with even the most attenuated forms of humanitarian morality; but I trust that the number of the profession who would be willing to withhold prescription from patients whom they had never seen, but whose poor prognosis they had gleaned from another's letter, would be few. I, personally, would prefer any amount of Ministerial muddle, misunderstanding, and delay to this.

As to the waste of six persons' butter ration, perhaps I am insane enough to believe that even in this utilitarian age which begets sentiments akin to those of Dr. Harris, the average Englishman would willingly forgo one eight-millionth part of his weekly allocation if this went to ameliorate the condition of a sick fellow.—I am, etc.,

Orpington, Kent. BRIAN D. JOHNSON.

Health Centres

SIR,—I have recently read with great interest an account in the lay Press of a scheme at Dartford, Kent, whereby four practices, involving eight doctors, have been merged into one. Three main surgeries have been provided, and the arrangement enables each doctor to have one day off per week, together with alternate Saturdays, night duty being by rota. Some time ago I put forward a plea in these columns for the early establishment of health centres and regular working hours under the proposed State Medical Service, so I am naturally pleased to see that some others at least share my views. It would be very interesting to have the views of other medical men on this project, and it is to be hoped that the Dartford doctors will be good enough to inform the profession as a whole of the success or otherwise of their scheme in due course.

After eight years of general practice in various parts of the country I must confess myself unable to understand or appreciate the "freedom" which we are supposed to enjoy at present and which so many doctors, writing each week in this *Journal*, are so afraid of losing. Most of us already take N.H.I. patients, whom we are bound to attend at all times, and are in addition the virtual slaves of the rest of the community. In theory one can accept only the patients one desires; in practice, as everyone knows, one must take all and sundry. This being the case, I cannot believe that it is fear of "control" which is the true reason for the widespread opposition to any form of State service; nor can one assume that the reason is financial, since the overhead cost of running a practice nowadays is so great that the profits are, in general, extremely modest.

It is unfortunate that in the past we have represented ourselves to the public—falsely, I think—as a race of supermen, to whom leisure and a certain amount of private life meant nothing, and that we have allowed them to persist in the mistaken belief that a patient must always have the same doctor, whatever the circumstances. No one can doubt that a proper system of health insurance will be of inestimable value to the community, but it is also clear to every general practitioner that under such a scheme the amount of work will be enormously increased. It is not too much to say that the medical man already has one of the most harassing jobs in the world. Under a State service, unless some suitable provision is made, we know instinctively that our lives will be quite intolerable.

I do not wish to appear dogmatic, but it does seem to me that this is one of the main reasons for the existing distrust and apprehension. I have yet to meet a colleague who believes that the present quixotic system is right or necessary; yet how seldom does one hear the fact mentioned in public. Possibly this is due to fear of the fatuous retort (usually made by some person with ample leisure): "Why did you become a doctor?"

With regard to the direction of doctors, which will obviously be necessary in some form to ensure a proper distribution, I think it is clear that with fixed hours, and the removal of surgery premises to a health centre, this innovation would lose most of its distasteful character, as it would enable the doctor to live where he pleased within reasonable distance of the centre. In conclusion, I would like to express my admiration for the pioneer action of the Dartford doctors and to express my hope that their project will be a success. So far from opposing the new Health Service, it appears to me that the time has come for us to confess our limitations and to request the Minister of Health to provide us with conditions which will no longer be a grave menace to our health and happiness and a constant source of anxiety to our dependants.—I am, etc.,

Llandudno Junction, Caernarvonshire. H. DAKIN.

Supply and Demand

SIR,—It seems to be a matter of general agreement that the successful working of a National Health Service (in whatever form it finally emerges) will require an increased number of doctors. The formation of Regional Appointment Boards, therefore, leads to some interesting speculations. One early result might be that Scottish, Welsh, and Northern Ireland graduates would be prevented from leaving their own countries, which, presumably, would have first claim on their services if required. If in addition the Government of Eire were to ban the export of doctors, the question would then arise of whether the population of England could receive adequate medical attention.

Further, consideration of their own needs by Provincial Boards might lead to a situation in which graduates, qualifying in the provincial universities, would be tied to their own districts; and, under a rigid appointments system, doctors from the Dominions might find it difficult to enter English medicine by "free-lancing" in resident posts at the various special hospitals in London. What would be the ultimate fate of English medicine and surgery without these convergent and enriching streams? Perhaps, after all, there is still something to be said for the much abused *laissez-faire* and its often forgotten concomitant *laissez-passer*.—I am, etc.,

Bournemouth, Hants. T. R. AYNSLEY.

Soluble Sulphonamide Compounds

SIR,—The soluble sodium salts of sulphapyridine, sulphathiazole, sulphadiazine, etc., introduced first in 1939, have been exceedingly useful preparations for intravenous injection, especially in the unconscious patient. Their great disadvantage, as is now well known, is their high alkalinity and consequent liability to cause irritation and even necrosis in the tissues unless they are highly diluted. This property is occasionally dangerous—as when, by some inadvertence, these preparations are injected undiluted into the theca, the brachial artery (in mistake for a vein), or the subcutaneous tissue (in mistake for a muscle). From these respective causes I have seen permanent sciatic palsy, loss of an arm, and deep sloughing ulcers of subcutaneous tissue and skin. It would seem therefore that these preparations would by general agreement be superseded as soon as a neutral preparation, proved to be harmless and equally efficient, could be obtained. This I consider has been done.

My colleagues and I have injected the preparation known as "soluthiazole" intravenously or intramuscularly whenever a sulphonamide injection was indicated in this hospital for over two years. We are quite satisfied that this preparation is harmless intravenously, intramuscularly, and even when injected, as sometimes happens, deeply into the subcutaneous tissue. The *p*H value is around 7. The solution is not, however, isotonic. It is hypertonic. Accordingly we have not used it, nor, indeed, have had occasion to use it, in contact with mucous or serous membranes. The first preparation which we tried had a tendency to crystallize out in some of the ampoules, but I understand that the preparation now in use has been slightly modified to obviate this defect, and we have seen no trace of crystallization in any of our ampoules for more than a year. The ampoules of 5 ml. each containing 1 g. of sulphathiazole should be kept at room temperature, not in the cold.

During the course of my teaching of students and postgraduates I have been struck by the almost universal ignorance that the problem of the production of a soluble neutral preparation of sulphonamide in concentrated form and completely satisfactory for intravenous and intramuscular injection has been solved. Hence this letter.—I am, etc.,

London, S.E.13. H. STANLEY BANKS.

Lung Puncture and Artificial Pneumothorax

SIR,—The annotation headed "Pleural Gas Analysis" (Jan. 4, p. 21) makes reference to induction of artificial pneumothorax and raises the interesting question of the frequency of lung puncture during this operation. During the induction of well over one hundred artificial pneumothoraces during the last year I have had two cases of *tension* pneumothorax, which followed the inductions within a few hours. In these cases emphysematous bullae were found on the lung surface at subsequent thoracoscopy, and probably the development of the tension element in these cases was due to puncturing these bullae.

That a leak of air at the lung surface does, however, much more frequently occur when it is punctured than these two cases suggest I have no doubt, because I have often been struck by the greater degree of collapse of the lung seen when screening the patient after induction than could be accounted for by the amount of air introduced. Since the great majority of artificial pneumothoraces very soon "stabilize" themselves without any tension element developing, some mechanism must be at work to close this puncture hole. I think it can

simply be accounted for by the relaxation of the previously stretched lung surface afforded by its collapse, which allows the edges to appose sufficiently to close the gap even during inspiration. A simile would be the pin prick in a piece of stretched sheet rubber that closes when the tension is released. In the case of the punctured emphysematous bulla, on the other hand, elastic tissue is reduced in its wall and the lung relaxation will not assist the closure of the puncture to the same degree. Especially will this be the case on inspiration, when the lung surface will be more stretched than on expiration even when partially collapsed. Thus a "ball valve" mechanism is not difficult to visualize where air is admitted to the pneumothorax space during inspiration but cannot escape during expiration, producing an ever-increasing air pressure within the pleural space.

The opportunities for puncturing the lung at induction are great, and I think the incidence is high. Most tuberculosis workers must have been struck by the number of times the lung has obviously been punctured with no attendant ill effects. However carefully the induction is done, air may be withdrawn into the novocain syringe when making sure the needle is not in a vessel, or lung pressures may be obtained on the manometer with the induction needle itself penetrating the lung. I would suggest, therefore, that in the great majority of cases it does not matter if the lung is pierced, as the mechanism described above protects the patient from ill effects. Although my series is very small and no definite conclusions can be drawn from it, it is, I think, significant that emphysematous bullae were discovered in the two cases developing a tension element. Although the lung was pierced in many other cases (as proved at induction or later by screening) no bullae were discovered on the lung surfaces at subsequent thoracoscopy.—I am, etc.,

London, N.W.10. PETER STRADLING.

Epidemic Gastro-enteritis

SIR,—I take the liberty of encroaching upon your space to make a few remarks about the recent outbreaks of "enteritis" which are occurring in maternity units throughout the country. We have had sporadic cases since August, 1944, though no case was fatal and all responded to treatment. It is mostly the nursing mothers who become affected, and it is also noticeable that the nursing staff, especially new pupil midwives, are susceptible.

The onset in mothers is sudden. The patient may be quite well in the morning and yet some hours later may complain of a feeling of nausea. This is seldom followed by vomiting (though occasionally, yes), but appetite is lost and the sight of food aggravates the nauseous feeling. This is followed shortly by a feeling of abdominal discomfort, which in turn is followed by abdominal pain of a colicky nature (umbilical region). Examination of the abdomen at this time shows a certain amount of meteorism to be present and also a "splashing" sensation in the caecal area. Watery stools are passed and may number anything from three to eight daily.

Patients who exhibit these symptoms are generally in the third to the eighth day of the puerperium. The condition clears up in about four days, and its cessation is abrupt.

For those who may be interested I give the routine treatment. At the onset of symptoms nothing in the way of diet is given except milk and soda-water for 24 hours or 48 hours. At the same time two tablets (1 gramme) of sulphasuxidine is given every four hours for 48 hours. If pain is prominent and the stools very frequent tincture of opium 15 min. (0.9 ml.) is given t.i.d. This generally leads to cessation of all symptoms in 36–72 hours. Occasionally treatment is preceded by the administration of ol. ricini 2 dr. (7 ml.) on the assumption of a toxin being present in the gastro-intestinal tract.

Bacteriological examination of faeces has been abandoned—all findings having been negative. Analysis of the water supply (to exclude metallic poisoning) was done, and a rough examination of the kitchen utensils failed to show any possibility of solvency of metals. We are ignorant of the cause, but are inclined to think that food—especially "frozen meat"—may be involved.

In regard to the newborn babies we have been fortunate (so far). Isolated cases have and do occur. Breast-fed babies are not immune, and indeed a relation can readily be established between "infected" nursing mothers and their babies. Our worst case was one of a breast-fed infant. My own opinion is that while the mother is "incubating" or developing the "toxin" a minimal amount may escape through the milk to the infant, and while the amount is not sufficient to cause symptoms as yet in the mother, it is sufficient to cause disturbance in the baby. A careful watch is kept in the nurseries, and as soon as an infant develops an "unusual" relaxation of stools the following treatment is adopted.

No milk of any description is given. Ol. ricini 15 min. (0.9 ml.) is administered and 0.5% saline with glucose is given by mouth, sufficient being given to satisfy basic fluid requirements—that is to say, 2½ oz. (71 ml.) per lb. body weight in 24 hours. At the same time sulphasuxidine 0.25 g. is given 6-hourly for a minimum of 36 hours. When symptoms abate half-strength boiled breast milk is given (which is sometimes acidified by adding 2–3 min. (0.12–0.18 ml.) of *B.P.* HCl dil.). The feeds are increased daily.

It would be interesting to hear the treatment from other units.—I am, etc.,

Burnley, Lancs. ANTHONY EUSTACE.

Aspiration of Acute Pleural Effusions

SIR,—Experience in consulting practice and in hospitals, civil and military, suggests that there is not a little uncertainty as to the indications for aspirating an acute pleural effusion. It may be due to the natural desire to prove an effusion diagnosed on clinical signs, coupled with faulty teaching of the inexperienced. Removal of a sample for demonstration to students and for pathological examination is legitimate in a teaching hospital. Aspiration is quite another matter and may be detrimental to the patient. Liaison between clinical teachers should enable every student to see aspiration of the pleural cavity (for this or for some other condition) at least once in his career, and most house-men to perform it. The indications should be clearly taught. I believe them to be as follows:

(1) Dyspnoea at rest, particularly if increasing.

(2) Circulatory embarrassment from mediastinal displacement, particularly if increasing.

(3) Any suspicion of pus—for example, unduly toxic appearance, coated tongue, rapid loss of weight, swinging temperature. It should be noted here that the temperature may be very high with clear effusions, but that it seldom varies by more than two degrees in the day.

(4) An effusion which shows no sign of absorption at the end of three weeks, particularly if fever is not diminishing. Removal of part will often lead to absorption of the remainder, or examination of the liquid may raise the question of tuberculous empyema or of neoplasm.

(5) An underlying pulmonary condition requiring artificial pneumothorax treatment. Then it is important to air-replace the effusion before pleural adhesions develop.

I have seen a rise of temperature and increase of effusion so frequently after needling the chest in the acute stage that I prefer not to withdraw even a sample unless one of the above conditions exists, or unless there are strong reasons to suppose that the pleurisy is due to something other than tuberculosis.—I am, etc.,

St. Leonards-on-Sea, Sussex. E. A. WOOD.

Intra-articular Injection in Osteoarthritis

SIR,—Over the last eight years at the Charterhouse Rheumatism Clinic and in their private practice members of the staff have treated several thousand cases of arthritis by Grant Waugh's method of intra-articular injection.[1] Some hundreds of these were for disease of the hip-joint. I entirely agree with Dr. Vernon Hetherington's warning (Dec. 28, 1946, p. 1007) that for these a prolonged treatment is necessary, and also with his remarks on Dr. Mawson's paper (Nov. 9, p. 691), which is certainly too optimistic.

The object of this letter is to draw the attention of your readers to the advantage of using acid potassium phosphate (A.P.P.)[2] and acid magnesium phosphate (A.M.P.)[3] rather than lactic acid for the larger joints, as the effect of the injection is more prolonged; consequently the treatment, which is by no means painless, need not be administered so often. I make no claim that the salts are more effective than the acid, as we have made no comparative tests, but merely that the effect is more prolonged.

In practice, for a hip-joint, 20 ml. of A.P.P. is used on the first occasion, as A.M.P. is sometimes followed by considerable local reaction. A fortnight to three weeks later 10 ml. of A.M.P. is injected, and thereafter the interval is judged by the tendency to relapse, which may be from a month to six weeks. Usually six or eight injections are sufficient.

Personally I now always use the anterior approach to the joint. In about 10% of cases some fluid is present, which should first be aspirated before the injection is made. As much as 35 ml. has been withdrawn. For the smaller joints A.M.P. should not be employed, but it is excellent for knees and shoulders.—I am, etc.,

London, W.1. H. WARREN CROWE.

REFERENCES

1 Grant Waugh, W., *Lancet*, 1938, 1, 487
2 Crowe, H. W., ibid., 1944, 1, 563.
3 —— ibid., 1946, 1, 590.

Chemotherapy in Virus Diseases

SIR,—May I, greatly daring, be allowed to question the accuracy of a statement in the leading article on "The Chemotherapy of Tuberculosis" (Dec. 7, 1946, p. 862)? You say: "There is so far scarcely a hint that viruses are susceptible to any such [chemotherapeutic] attack, and nothing that we know of their properties and behaviour encourages belief to the contrary." Viruses are large protein bodies, and while little is known as to how they get into a living cell it seems probable that they do not ordinarily multiply except in the intercellular phase. Human beings after attack seem able to develop some method of sterilizing the viruses and acquiring an immunity which is usually permanent—e.g., measles and smallpox—though sometimes—e.g., influenza and the common cold—this immunity is lamentably transient, which suggests that there may be at least two methods of inactivating a virus. There is however a third possible way of attacking the problem besides those of actually killing the virus or in some way inactivating it. If, when once a virus has gained access to a cell, it could be imprisoned within that cell or (more hopefully) other cells have their walls made impermeable to the virus, either the virus would die out or the body have time to develop its defensive mechanism—that is, unless the original dose were already fatal. Is there any possibility that such a thing can be done by chemotherapy or any other means?

Our present knowledge about living cell membranes has recently been conveniently summarized by Jevson and Danielli in their book *The Permeability of Natural Membranes*, and I have good grounds for believing that what follows is at least agreeable to such knowledge. The cell membrane is semi-permeable, which means that it retains certain electrolytes and other substances while it is freely permeable to others. By virtue of this property the cell contents exert an osmotic pressure which distends the cell with fluid. When a child is in full health, and particularly after a seaside holiday, its flesh has a full firm feel which is quite different from that of oedema. The difference is that in the healthy flesh the fluid is contained in the tissue cells, while in oedema it is in the tissue spaces—i.e., it is intracellular instead of intercellular. What has happened is that something has occurred to the cell walls that has enabled them to retain products to which they were previously permeable, and so their osmotic pressure has risen with the consequent firm feeling typical of robust health. (It is of course also possible that the cells might have manufactured some new metabolite which had raised the osmotic pressure, but on many grounds this seems unlikely, particularly as the reverse process in shock, wherein the erythrocytes soon become permeable to potassium, which is then excreted, is well known.) Now the cell wall consists of what one might consider a very fine network made up of lipoids, unravelled protein molecules, and other bodies, making the fine semi-permeable sieve; and it is also probable that there exist some larger spaces or "pores" and that it is through such pores that the viruses and the large molecules of toxins find entrance. If therefore we could in some way diminish these pores we might expect not only to exclude stray viruses but also toxins as well; in fact we should produce health. Can this be done?

I have written of the typical health of a seaside holiday, but we know that clinically many of the benefits of such a holiday can be reproduced by liberal dosage with cod-liver oil or vitamins A and D; and vitamin D at least is directly produced in the body at the seaside. These two fat-soluble vitamins are chemically closely allied with substances already known to exist in the cell walls, and it is no far-fetched hypothesis to suggest that an ample supply of these vitamins would, in fact, adsorb on to the existing cell wall network, so producing that finer sieve which is required to enable the cell to retain other contents and so raise its osmotic pressure; it might even materially alter the physical, chemical, or electric formation of the larger pores. (When one gets down to molecular phenomena, spatial, chemical, and physical or electrical conceptions largely merge into one another, but in this case the process is most easily visualized as a net or sieve.)

Now I believe that chemotherapy on these lines—i.e., the injection of large doses of vitamins A and D—does give us just the effect that I have suggested as required to limit and inhibit the invasion of the body by viruses. I have mentioned in various communications, and do not here repeat, the effect of such injections on bacterial conditions—i.e., presumably on the large toxin molecules—and also their effect on cases of influenza in a letter which attained most unexpected publicity, a publicity which has, I fear, prevented many doctors from testing the truth of what I then stated and have since proved many times over, not least in my own person. Most cases of measles are hardly bad enough to warrant giving the child an injection, but in those cases where for one reason or another I have given such injections (I use "dekadexolin," which was first made for me some sixteen years ago) the subsequent improvement has been rapid and marked. Chicken-pox is even less in need of chemotherapy and I have only had two cases in which "dekadexolin" seemed justifiable. They were children in whom the chicken-pox had got complicated with an impetigo with the result that nearly every pock became impetiginous, a distressing complication I have not seen recorded hitherto. To both these children I gave some "dekadexolin," and the way the infection cleared up was startling in its rapidity.

The simplest and easiest virus infection in which to study the effect of "dekadexolin" is herpes zoster, a condition so painful that the occasional discomfort caused by the injection is of little account. In my experience these cases all respond the same way. If the case is seen in the erythematous stage before any vesicles have formed, 2 ml. of "dekadexolin" will abort it completely. Even after many vesicles have fully matured before the case is seen, I find that administration of "dekadexolin" stops the threatening areas from developing as one would normally expect, and the whole disease runs a more rapid course. I have used "dekadexolin" very little for mumps, but one adult to whom I gave it made such a rapid recovery that I doubted the diagnosis until his children later developed the disease, which he insisted I should treat in the same way and with the same happy results. I have had no opportunity to treat any cases of smallpox, but during the recent epidemic at Birkenhead I found that there was no known treatment for the very severe cases, so I wrote suggesting the use of "dekadexolin." My letter only finally reached the doctor in charge while he was treating the last severe case. I was told verbally that there was dramatic improvement for 48 hours after "dekadexolin" was started, but then the improvement ceased and the child rapidly died. No further case occurred on which to try the treatment, but apparently this was the only therapeutic measure which had been followed by any improvement in any such case and the child was very bad when it was instituted. I have not seen full notes of the case so I cannot comment on it further. I am well aware that one swallow does not make a summer, but it certainly seems a treatment worth further investigation.

All this may seem a meagre result for sixteen years' patient study. My reasoning may be wrong, but of the correctness of my observations I am quite convinced, and where I have been able to obtain controls or the opinion of better clinicians than myself I have availed myself of them. All too often, however, such help has been of little use. For example, during the war I had two children brought to me with muscular pains and tenderness and weakness of one leg, just like a very early poliomyelitis. The obvious thing to do was to prevent development if I could, so I gave a dose of "dekadexolin" and arranged for the mother to take the child next day to the Manchester Children's Hospital. In each case the physician there could find no trace of anything wrong. Were they cures, as according to my hypothesis they might well be; or was my provisional diagnosis wrong? These are the conditions under which a general practitioner works. I have just picked up straws as I found them in the course of a busy practice.

To me they all seemed to be blowing the same way. Many years ago they caused me to formulate the hypothesis I have restated above, and all the further knowledge I have gleaned seems to me to suggest that we have here a method of general application which may point the way to as signal a victory over the viruses as has been achieved in other fields by the sulphonamides and penicillin. Even in bacterial infections it is a great adjuvant to their action; for viruses it seems at present our only practicable method.

I should not close this letter without a note about the administration of "dekadexolin." For some reason it does not act well unless it is given into the gluteal muscles, and more than 1 ml. should not be given in one spot if pain is to be avoided and absorption hastened. Absorption is probably the great problem and not at all a simple matter. One might see even more marked effects if larger doses could be given intravenously as a very fine emulsion. The production of emulsions of the requisite fineness and stability presents great technical difficulties, though I have handled them, and if the general thesis of this letter is correct they would no doubt be made generally available. There may be other substances more effective than vitamins A and D. "Dekadexolin" anyhow is perfectly harmless, for I have given full doses to newborn babies as well as to the very aged. I only hope that this letter may stimulate research into the physicochemical effects of vitamins as well as their catalytic actions, for it may well add to our control over illness and improve the health of our patients.—I am, etc.,

Winsford, Cheshire. W. N. LEAK.

Calcification of the Thyroid Gland

SIR,—I read Dr. R. T. Shiggins's report (Dec. 14, 1946, p. 899) of calcification of the thyroid gland with interest. A few days later I saw a somewhat similar case which you may consider worthy of record.

CASE REPORT

An unmarried female patient aged 62 years was admitted to hospital complaining of frequent vomiting for 9 weeks prior to admission. She had had an operation for carcinoma of the right breast eleven years previously. Examination revealed a moderately wasted individual of neurotic temperament. There was a hard fixed mass attached to the mid-sternum and clinical signs suggesting metastatic carcinoma of lungs and mediastinum; abdomen, N.A.D.

Radiography confirmed the presence of widespread secondary deposits in sternum, lungs, and mediastinum, and showed an oval calcified mass measuring 5.0 cm. long, 3.0 cm. broad, and 2.5 cm. antero-posteriorly situated in the position of the left lobe of the thyroid gland.

Clinically the neck was normal on inspection, but palpation revealed a hard movable oval mass in the region occupied by the left thyroid lobe, which moved freely on swallowing. The patient showed no signs of abnormal thyroid activity or of local pressure.

In these circumstances, and having regard to her general condition, exploration was not indicated. The differential diagnosis would appear to include calcified lymph gland, calcified adenoma of thyroid, and calcification of the left lobe of the thyroid. In view of the standard measurements of a thyroid lobe—5 cm. by 3 cm. by 2 cm. (Gray's *Anatomy*, 27th edition)—calcification of the lobe would seem the most probable. It is interesting to note that digestive symptoms were prominent in both patients, and, in each, abdominal investigation was negative.—I am, etc.,

South Shields, Co. Durham. R. T. TOWSON.

R.M.B.F. Christmas Gift Fund

SIR,—I would like to thank through your *Journal* all who have generously subscribed to our Christmas Gifts Fund; it is a very great pleasure to be able to report that over £2,200 has been received.

On behalf of the Committee I warmly thank all the contributors and at the same time would like to express our gratitude to all the British Medical Association Divisions and Branches, Panel Committees, and Medical Societies who arranged collections or who gave donations.—I am, etc.,

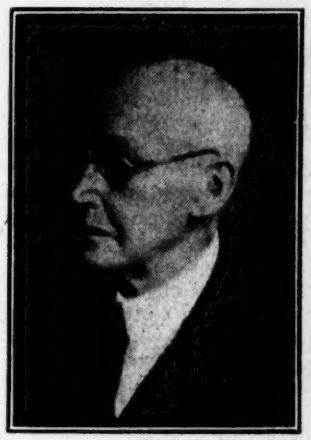
C. LUTHER BATTESON,
Hon. Treasurer,
Royal Medical Benevolent Fund.

Obituary

SIR ARNOLD LAWSON, K.B.E., F.R.C.S.

Sir Arnold Lawson, for many years ophthalmic surgeon to Middlesex Hospital, and afterwards a member of its consulting staff, died on Jan. 19 at the age of 79. He was an exceptionally able ophthalmologist and a man of attractive personality. He was born in London in 1867, the son of George Lawson, F.R.C.S., surgeon-oculist to Queen Victoria. One of the tasks he undertook early in his professional career was to revise and largely rewrite in 1903 the sixth edition of his father's notable textbook *Diseases and Injuries of the Eye.*

He went to Merchant Taylors' School, and then began his training at the Middlesex Hospital, where he was Senior Entrance Scholar. His school career gave promise of future high achievement. He won the Hetley clinical prize in 1890, and later he became Senior Broderip Scholar. He qualified in 1891, and in the same year took the M.D. of the University of Brussels. In 1893 he became a Fellow of the Royal College of Surgeons. Paternal example, no doubt, determined his choice of ophthalmology, and he had the great advantage of a period as clinical assistant to Sir John Tweedy at Moorfields. He joined his father in consulting practice at No. 12, Harley Street, and continued at that address after his father's death and throughout his professional life. In 1896 he was appointed ophthalmic surgeon to the Paddington Green Children's Hospital, a position which he held until 1910, when he became assistant ophthalmic surgeon to his old hospital, the Middlesex, and full ophthalmic surgeon and lecturer on ophthalmology four years later. These posts he retained until his retirement under the age limit, when he was elected to the consulting staff. From 1900 to 1914 he was also surgeon to the Royal London Ophthalmic Hospital, and here again he was afterwards consulting surgeon. Other institutions with which he was associated as a consultant were the Royal Victoria Hospital and Home for Incurables, Putney, and Epsom College.



[*Elliott and Fry, Ltd.*

When St. Dunstan's for War-blinded Soldiers, Sailors, and Airmen was founded by the late Sir Arthur Pearson during the first world war, Lawson discovered there a form of service which engaged all his sympathy as well as his clinical skill. He served the institution not only as ophthalmic surgeon but as chairman of the Ophthalmic Advisory Board. His experiences among blinded soldiers were set out in a narrative, *War Blindness at St. Dunstan's*, published in 1922. He also served other war institutions, including the King Edward VII Hospital for Officers. In 1939 he was appointed part-time civil consultant (ophthalmic) to the Royal Navy.

Sir Arnold Lawson took a conspicuous share in the advancement of ophthalmology in general. He stood aside from the semi-political aspects of ophthalmic service, but he did a great deal to advance the subject on its scientific and clinical side. He was a prominent figure for nearly half a century in the Ophthalmological Society of the United Kingdom, of which his father was an original member. For very many years Sir Arnold served as its treasurer with scrupulous care. The Society had his real affection, and it was due to him and the late Treacher Collins and some others that it kept its identity and refrained from amalgamation in the Royal Society of Medicine. But he was an active member of the R.S.M. and at one time president of its Ophthalmological Section. He also served as one of the honorary officers of the Section of Ophthalmology at Annual Meetings of the British Medical Association in 1899, 1906, and 1927. At the meeting in Edinburgh in

the last of those years he read a noteworthy paper on the value of antiseptics in modern ophthalmic surgery.

He was a most careful operator, and yet in some ways unconventional. While he never advocated any neglect of pre-operative precautionary measures, he thought the routine use of antiseptics in eye work in some respects proceeded from a misconception. He recalled that he was the first surgeon at Moorfields to adopt an overall, and that his revered teacher, Sir John Tweedy, right up to his retirement used his index finger to effect counter-pressure and to prevent the eye rotating inwards when making his cataract section, instead of employing fixation forceps. The results obtained compared quite favourably with those seen in later years when masks, gloves, overalls, and all the other appurtenances were, rightly, held to be *de rigueur*. Lawson himself entirely gave up the use of gloves in intraocular and strabismus operations, but he was extremely careful that no part of any instrument other than the shaft or handle should be touched by his fingers. He was accustomed to soak his hands in spirit after scrubbing, and to have a bowl of spirit by him during the operation so that he could rinse his hands at any moment.

What appears to have been his first contribution to the literature of ophthalmology was an account in 1897 of a case of orbital cyst. His father had operated and removed the cyst, and had then handed it over to his son for examination and report. From that time onwards the *Transactions* of the Ophthalmological Society contain frequent contributions from him, not only set papers but remarks in discussions, generally brief, but always pointed by personal experience. He described his method in operating on intraocular tumours, his employment of Thiersch grafts for xerophthalmia in the early years of this century, and his treatment of corneal ulcers by quinine. He collaborated with Sir James Mackenzie Davidson in trying radium treatment for various external diseases of the eye. Quite early in his career he published the report of an exhaustive inquiry he had made into the bacteriology of the normal conjunctival sac, and the results of that investigation, he claimed, safely guided him through many years of operative work. Apart from the revision of his father's standard work, Arnold Lawson did not write a book, but articles by him on such subjects as cataract, affections of the ocular muscles, diseases of the iris and ciliary body, and sympathetic ophthalmia are to be found in various medical encyclopaedias.

He married in 1904 the eldest daughter of Andrew Clark, F.R.C.S., honorary surgeon to the King, and had two sons and one daughter. His knighthood was conferred upon him in 1920. Perhaps his last services to the profession were in connexion with the Royal Medical Benevolent Fund. He was elected president in 1945, on the death of Sir Thomas Barlow.

Dr. FLORA NIHAL-SINGH died at her home in Pebmarsh, Essex, on Dec. 19 at the age of 64. Miss Singh was the daughter of the first native canon of Lucknow and was born in India. She was educated at the Calcutta Medical College and the London School of Medicine for Women, qualifying M.R.C.S., L.R.C.P. in 1917. She had been a senior house-surgeon at the Essex County Hospital in Colchester before she moved to Pebmarsh, where she built up an extensive practice. She was greatly interested in the work of the British Red Cross Society and was an active member of the Colchester Medical Society. She had been a member of the British Medical Association for twenty-six years.

Dr. JOHN YOUNG, of Bishop's Stortford, died at the age of 81 on Dec. 20. A student of Guy's Hospital, and later a house-physician and resident obstetrician there, he took the M.R.C.S., L.R.C.P. in 1891, the M.B., B.S. in the same year, and proceeded M.D. three years later. He had been in general practice for many years at Stamford Hill, in North London, before he moved to Bishop's Stortford in 1919. Though in nominal retirement, he acted as medical officer to Bishop's Stortford College, of which he was later a governor. In 1922 he was elected to the urban council and also to the old board of guardians. This was the beginning of a long period of public work. He was chairman of the visiting committee of the Bishop's Stortford board of guardians and a member of the board of management of the local hospital and of the East Herts Joint Hospital Board. He had been an elder and former deacon of the Congregational Church. Dr. Young finally retired from the local council after having served for twenty-four years. Among his many other interests was the local Beekeepers' Association, of which he was treasurer. He was also president of the local Conservative Association when that body presented him with an illuminated address on the occasion of his eightieth birthday.

Dr. MARY HELEN MACGREGOR GORDON, of Newport, Monmouthshire, died on Dec. 20. Dr. Gordon was a daughter of the late Rev. William Gordon of Arnsheen, Barrhill, Ayrshire. A student of Edinburgh University, she qualified M.B., Ch.B. in 1921, and took the D.P.H. a year later. Early in 1924 she became assistant medical officer to the Monmouthshire County Council, and was also an assistant physician in the dermatological department of the Royal Gwent Hospital. She was secretary, and a former president, of the town's Caledonian Society, and had been a member of the British Medical Association for twenty-one years.

Dr. Margaret M. Basham writes: Mary Gordon was much beloved in this county and will be greatly missed by a wide circle of friends and patients. Among other things, she was in charge of the V.D. clinics at the Royal Gwent Hospital for the women and children of the county. She always gave of her best and was always ready to help others.

Dr. JOHN LISSAUER, who died on Dec. 24, 1946, was educated at Munich, Heidelberg, and Berlin. He had specialized in paediatrics, but he had the misfortune to be a Jew in pre-war Germany. After a brief period in a concentration camp at the end of 1938, he managed to reach this country in February, 1939. Later he became assistant medical officer of health and assistant school medical officer at West Hartlepool. His wife, who survives him and is also a doctor, joined the Middlesbrough school medical service at much the same time.

Dr. CHARLES LLEWELLYN LANDER, who was 73, died on Christmas Day at Gillingham, Dorset, where he had been residing since his retirement from practice in Plymouth in 1934. He had been consulting surgeon to the Prince of Wales's Hospital, Devonport, and had served on the surgical staff there for some thirty-five years. A member of the British Medical Association since 1902, he took a keen interest in medico-political affairs. He had been chairman of the Plymouth Division and representative at the Annual Representative Meeting in Glasgow in 1922. He was also an active member of the Plymouth Medical Society. In the 1914–18 war he served with distinction, and was awarded the M.C. and the D.S.O. while in command of the 2/3 South Midland Field Ambulance. He was a J.P., and for many years a city councillor and vice-chairman of the public health committee. Although devoted to the voluntary hospital he firmly advocated the introduction of the municipal hospital system and foreshadowed mutual benefits from close co-operation. A first-class chess player, he reached the semi-final of the B.M.A. Melbourne Chess Cup competition in Plymouth in 1938. Of a kindly and sincere disposition he was beloved by his patients, and his opinion, in debate or at the bedside, was always appreciated by his colleagues, who will ever remember him with the highest affection and esteem. Dr. Lander is survived by his widow, one daughter, and two sons. One son, Dr. Oswald Lander, practises in Plymouth.

Dr. ALEXANDER JOHN GIBSON died in a Glasgow hospital on Dec. 27, 1946, at the age of 56. It was with great regret that the members of the Ayrshire Division of the British Medical Association learned of the death of Dr. Gibson, the only son of the late Mr. and Mrs. James B. Gibson of Baillieston, Glasgow. Dr. Gibson had had a distinguished career. He served in the first world war, gaining the D.S.O. and retiring with the rank of lieutenant-colonel. Between the wars he was in active practice in the Royal Burgh of Irvine and took a leading part in the activities of the Ayrshire Division. After serving for many years as a member of the committee, he was elected chairman of the Division in 1932, continuing in office until 1934. Dr. Gibson had a very attractive personality, and anything that he undertook always seemed to move smoothly. He was a first-rate golfer and enjoyed membership of the Bogside course. He represented the Division in the competition for the Treasurer's Cup in 1936. In 1939 Dr. Gibson rejoined the R.A.M.C. and was appointed A.D.M.S. of the 15th Scottish Division. Later he served in the Northumbrian district and overseas, in command of the 12th General Hospital in Palestine, retiring in 1945 with the rank of colonel. Dr. Gibson was twice married, and to his wife and his two daughters the Division has already expressed sincere sympathy.

Dr. GEOFFREY WARD THOMPSON died at his home in Scarborough on Dec. 27, 1946. He was educated at Rossall School, Christ's College, Cambridge, and St. Thomas's Hospital. After qualifying in 1893 he was house-surgeon and house-physician at St. Thomas's, and later house-surgeon at the hospital for

sick children in Nottingham. He settled in Scarborough in 1895, and was in general and consultant practice there until his retirement in 1939. Dr. Thompson was medical officer to Bramcote, Queen Margaret's, and Queen Mary's Schools, and medical referee for the Ministry of Pensions, 1919–39. He joined the R.A.M.C. in 1914, and served in Gallipoli, Mesopotamia, and India. He was an active member of the British Medical Association for fifty-one years, serving on all the committees of the local division, and holding office as chairman in 1913.

A colleague writes: Geoffrey Thompson's interests were so wide and varied that it is difficult to catalogue them in a brief notice. They can best be summarized as, primarily, his family and his profession, and then all forms of sport. In his youth he was a first-class performer at cricket, soccer, hockey, and athletics, and this interest in sport was retained throughout his life. In 1934 he was president of the Scarborough Cricket Festival. Thompson was a true Christian in the highest sense of the word, and his life, professional and otherwise, bore eloquent testimony to this fact. He was loved and respected for his professional skill, his kindliness, his unselfishness, and for those characteristics that a lifetime of devoted service must bring. He will long be remembered in Scarborough as a good physician and a good man.

Dr. WILLIAM HAROLD WHITE died at his home in Hindhead, Sussex, on Dec. 29 at the age of 64. A son of the late Rev. Samuel White, he was educated at the Clergy Orphan School at Canterbury and at St. Thomas's Hospital. He qualified in 1917 and did a year's service in the R.A.M.C. He had been a house-surgeon at the Royal Portsmouth Hospital, and a house-physician at the General Lying-in Hospital in York Road before he began to specialize in obstetrics. Dr. White, with his partner, founded a maternity home at Stonefield, Blackheath, London, S.E.2. He was a keen advocate of vegetarian diets with a high proportion of uncooked food, and insisted on the special value of this regime for expectant mothers. During the recent war the main part of his maternity home was evacuated, but Dr. White stayed on at Stonefield to attend patients who were unable to leave this much-bombed area. His death came only a few months after his retirement to Hindhead. He leaves a widow, three sons, and two daughters.

Dr. JOHN SAMUEL MARTIN, who died at the age of 82 on Dec. 29 at St. Margaret's Bay, Dover, had been a well-known general practitioner in Kidderminster. A native of Co. Down, Dr. Martin was a student of Queen's College, Belfast, and Surgeons' Hall, Edinburgh, and he took the Scottish triple qualification in 1892. He first of all acted as assistant to his brother, James Martin, who was medical attendant for the Kidderminster medical aid association. When his brother resigned in 1895, Dr. John Martin took over as senior medical officer, a position he held until 1914. During the 1914–18 war he served with the R.A.M.C., and was at one time in command of No. 4 Ambulance Train. He returned to practise in Kidderminster after the war but moved to Dover on his retirement.

Dr. HERBERT STANLEY-JONES died on Dec. 29. Dr. Jones was an Australian who took the M.R.C.S., L.R.C.P. in 1903, as a student of Guy's Hospital. He graduated M.B. in 1904 and was for a time house-surgeon to the Hospital for Sick Children at Great Ormond Street. He was in practice in Bournemouth until the outbreak of war in 1914, when he served in the R.A.M.C. After demobilization he entered into partnership with Dr. A. H. Burnett, but later he opened a practice of his own in Southampton. He did a great deal of work for the Ministry of Pensions in Southampton and was also well known as an examiner for some of the insurance companies. He had contributed papers on the physiology of the thyroid and the suprarenals to the medical press, and he was an active member of the Southampton Medical Society. He had been a sick man for some time, but he continued in active practice until barely a month before his death.

On Dec. 31, 1946, ARTHUR MANTELL DALDY died at his home in Hove, Sussex. He was 77 years of age. Arthur Daldy was a student at Guy's Hospital, and he qualified M.B., B.S. in 1892, winning the gold medal in medicine, after taking the M.R.C.S., L.R.C.P. in 1891. He proceeded M.D. in 1893, and was elected F.R.C.S. a year later. Before coming to Hove in 1905 Dr. Daldy had practised for years in Surbiton. Throughout his successful medical career, for many years as a general practitioner, and latterly as an ophthalmic specialist, he placed his skill and energies unstintedly at the service of the community. During the 1914–18 war he served in the 2nd Eastern General Hospital with the rank of captain, R.A.M.C. In 1914 he was appointed honorary surgeon to the Sussex Eye Hospital, and on his retirement in 1929 was elected consulting surgeon to the hospital. From 1920 to 1945 he was ophthalmic specialist to the Hove Education Authority. He had been a member of the British Medical Association for over fifty-five years, and was a past vice-president of the Richmond Division and formerly secretary and treasurer of the Brighton Division for a period of seven years. His high sense of duty, his high ethical standards, and his unfailing kindness and gentleness had endeared him to patients and colleagues alike, and a large circle of friends in all walks of life will mourn his passing. He is survived by his widow, a son, and a daughter.

A colleague writes: By the death of Arthur Mantell Daldy the profession in Hove has lost one of its oldest and most respected members. In 1922 Dr. Daldy became hon. secretary and treasurer of the Sussex Branch. On his retirement from this office he was presented with a testimonial from his colleagues in appreciation of his valuable work for the Branch over many years. His work as Branch secretary brought him into contact with doctors all over Sussex, and his charm of manner and upright personality brought him a host of friends among them. At the Annual Meeting in Brighton in 1913 he acted as one of the secretaries of the Ophthalmological Section. Dr. Daldy was an able, courteous, and unassuming man, never seeking the limelight or pushing forward his claims. It can be truthfully said of him that in spite of his rather retiring manner he won the respect, admiration, and friendship of his fellow doctors, who deeply regret the loss of a valued colleague.

Dr. WILLIAM HARTLEY THOMPSON, who died at the age of 81, was buried at All Saints' Church, Bradford, on Jan. 3. Dr. Thompson was a student of Leeds University and qualified M.R.C.S., L.R.C.P. in 1891. He had been a house-physician at the Leeds Infirmary before starting practice in Bradford. He was one of the original members of the medical staff of St. Luke's Hospital, from which he retired as senior physician in 1939. Dr. Thompson was also honorary physician to the Bradford Children's Hospital, and after serving as a major in the R.A.M.C. during the 1914–18 war he became neurologist and medical specialist for the Ministry of Pensions. He contributed several short articles to this *Journal*, notably those on adenocarcinoma of the breast in a girl of 11 years, and strangulated inguinal hernia in an infant of 29 days. Dr. Thompson had been in partnership with Dr. W. G. Burnie, and his death will be regretted by all his many friends and colleagues in Bradford.

Mr. CHRISTOPHER TREDWELL HOLFORD, consultant surgeon to the General Infirmary, Burton-on-Trent, died suddenly at Tiverton, Devon, on Jan. 4. Having been forced to retire by ill-health brought on as a result of his long period of strenuous and untiring effort as honorary surgeon to the Burton Infirmary, it was his unfortunate lot to be unable, owing to war conditions, to settle down to enjoy the quiet of Devon and the delights of angling. These were his joys. These he had looked for as the just relaxations of a man who had worked unceasingly and without complaint to the benefit of thousands in the area the infirmary served. Mr. Holford was educated at Winchester, and from there went to St. Thomas's. He qualified M.R.C.S., L.R.C.P. in 1902, and afterwards held surgical appointments at St. Thomas's, at Warneford Hospital in Leamington, and at the Royal Infirmary, Hull. He took his F.R.C.S.Ed. in 1904. He then came to Burton and was in general practice until 1938, but it was as honorary surgeon to the infirmary that he was best known. His tirelessness, his unfailing consideration for patients, and his great technical skill as a surgeon soon made his name known, respected, and loved throughout the area served by the hospital. He overworked himself badly, but built up the infirmary to the high standard of efficiency that it now possesses. There will be his most lasting memorial—the new nurses' home when opened being given the name of Holford House. Throughout this busy life he gave service wherever it was required. During the years 1914–18 he was surgeon to the V.A.D. Hospital at Burton. He was also consultant surgeon to the Yoxall, Barton, and Ashby cottage hospitals. A member of the British Medical Association since 1903, he was a representative at the Annual Representative Meeting in 1911, and was president of the Staffordshire Branch in 1920–1. He was also chairman of the Burton Panel and Medical Committee for many years. He was made a Justice of the Peace of the county borough of Burton-on-Trent in 1940. Christopher Tredwell Holford was a man who will be greatly missed by all who knew him: by his fellow practitioners, by his own patients, and by the many who passed through his careful hands during his long office as honorary surgeon to the Burton Infirmary. A quiet, tireless, simple, honest man, he bent his whole attention towards helping those who required his aid and in the cause of the hospital he loved so much.—N. J. C.

Dr. WILLIAM MILL died on Jan. 5 at St. Andrew's, Lyme Regis, in his ninetieth year. He was the son of the late David Mill, of Tavistock, Devon. His medical studies were pursued at St. Mary's Hospital, London, where he qualified M.R.C.S. in 1882 and L.R.C.P. and L.M. in 1883. He was in general practice for many years at Wigan, but retired from this soon after the 1914–18 war and thereafter acted as locum tenens. This work he did regularly until 1942, in which year a fracture of the leg put an end to his physical capacity to continue. He was then 85, and his gallant struggle to earn a living excited the sympathy of both the Royal Medical Benevolent Fund and of Epsom College when he was obliged to apply to them for help, which was very liberally forthcoming from both organizations. Dr. Mill married Miss Etty Frederica Brooks in 1885. She died more than thirty years ago, leaving no family.

We announce with regret the death at the age of 75 of DR. JOHN VINCENT SHAW of Hereford. Dr. Shaw was born in Golcar, near Huddersfield, in 1871, and he qualified M.B., Ch.B. at Leeds in 1895. He was in general practice in Yorkshire and later in Derbyshire before he settled in Hereford in 1922. Dr. Shaw was always keenly interested in local affairs and particularly in housing conditions. He served on the Hereford City Council for several years and was elected mayor in 1934. He became an alderman in 1941. It was also in 1934 that he won his seat on the Herefordshire County Council. He stood for Parliament as a Liberal candidate in 1929, and again in 1935 it was suggested that he should stand for the Torquay Division, but he withdrew his candidature in order to devote more time to his municipal activities in Hereford. Dr. Shaw had been a member of the British Medical Association for forty-eight years, and he was also an active honorary secretary of the Herefordshire Free Church Council. He retired in 1930, but during the war years he took up practice again at Chippenham. Friends and colleagues in Hereford will all regret the passing of an invigorating personality who made an outstanding contribution to the medical, public, social, and religious life of the county. Dr. Shaw continued his many duties as an alderman and as a county councillor up to three days before his death from acute pneumonia on Dec. 22. Almost to the end he retained the buoyant optimism and cheerful disposition which had endeared him to the people of Hereford.

CATHERINE MABEL EDGERLEY was one of the first few women to qualify in Scotland. She took the L.R.C.P., M.R.C.S. at Edinburgh and the L.R.F.P.S. of Glasgow in 1894. Educated at Edinburgh and in Germany, she was at one time assistant medical officer at the West Riding Mental Hospital at Sheffield. She was also surgeon-instructress of the Otley Division of the St. John Ambulance Brigade. She contributed an article to the *Journal of Mental Science* in 1900 on the glioma of the corpus callosum. Her medical work came to an end, however, with her marriage in 1907 to Dr. Samuel Edgerley, who survives her. From then onwards perhaps her main interest was in the Brontë Society, and in 1931 we published in this *Journal* a note of hers on the eyesight of the Brontës, and in the following year a discussion of the causes of death in this remarkable family. She was for seventeen years the secretary of the Brontë Society and a frequent contributor to its *Transactions*.

Dr. FREDERICK CRICHTON MATTHEW will be greatly missed in Cornwall by a small circle of doctors who knew him well and by a large number of the general public who knew him intimately, chiefly in his home town of St. Ives. Dr. Matthew qualified in Edinburgh in 1900, took the F.R.C.S.Ed. two years later, and proceeded M.D. in 1903. He was a resident surgeon at the Edinburgh Royal Infirmary for a brief period. He came to Cornwall in 1905, before the motor car had invaded the quiet, winding streets of this pleasant little Cornish town. From that time onward, with one break during the first world war, when he served as a captain in the R.A.M.C., he worked for the people of St. Ives with a devotion which can seldom have been surpassed. He rarely took a holiday, and when he did he was always impatient to get back to the job. He had few hobbies or interests outside his professional work, and in later years he had little interest in medical politics. Despite his academic distinctions, he remained a general practitioner and did not practise as a surgeon. Though he was shrewd in judgment and accurate as a diagnostician, his sense of devotion to duty and the affection he evoked in the warm-hearted Cornish people among whom he worked were what most impressed those of his colleagues who came to know him. The profession in Cornwall will mourn the loss of a loyal friend and great gentleman.

The Services

H.R.H. the Prince Regent of Belgium has conferred the Chevalier of the Order of Leopold II with Palm and Croix de Guerre, 1940, with Palm upon Capt. A. R. Turnbull and Lieut. A. N. Wright, R.C.A.M.C., in recognition of distinguished services in the cause of the Allies.

The Bronze Star Medal of the U.S.A. was presented to Major H. G. McQuade, R.A.M.C., at the U.S. Ambassador's residence in London on Jan. 3 by Major-Gen. Bissell (Military Attaché), for meritorious achievement in connexion with military operations against the enemy in Italy from April 9 to 29, 1945.

The Efficiency Medal (Territorial) has been awarded to Capt. (Hon. Major) G. W. Thomas, Lieut. (Hon. Capt.) C. J. Stokes, and Lieut. R. D. Sim, R.A.M.C., and Capt. (Temp. Major) Janet E. Leng, employed with the R.A.M.C.

DEATHS IN THE SERVICES

Col. JOHN HEATLY-SPENCER, C.B.E., M.D., F.R.C.P., who died at Kew on Dec. 31, 1946, aged 68, was a distinguished member of the Royal Army Medical Corps. He was educated in New Zealand and at Charing Cross Hospital and qualified in 1906 at the London University. He was elected a Fellow of the Royal College of Physicians of London in 1935, after passing the M.R.C.P. in 1921. He obtained a commission in the R.A.M.C. in 1906 and served in India and in various parts of Europe in the first world war. In 1923 he took the D.T.M.&H., Cambridge, and held the important post of professor of medicine at the Millbank R.A.M.C. College from 1929 to 1934. He then became professor of tropical medicine at the College and consulting physician to the British Army until 1937, when he retired. He established a reputation as a sound physician, which led to his election to the coveted fellowship of the Royal College of Physicians—a position which few Army Service officers have attained. He was appointed Hon. Physician to the King in 1935–7. For his long and meritorious service he was awarded the O.B.E. in 1927 and the C.B.E. in 1937. In 1928 he had changed his name from John Heatly Spencer to John Heatly-Spencer. After his retirement he found an outlet for his energies as Colonel R. A. R. of O. and as a member of the Ministry of Pensions tribunal in 1944. He was also a member of council of the British Medical Association in 1939–40. He leaves a wife and two daughters to mourn his loss.

Col. LEWIS AUGUSTUS CLUTTERBUCK, A.S.C. (retired), died on Jan. 2 at Falmouth at the age of 92. He had an unusual career, for after being educated at Sydney College, Bath, he obtained a commission in the Army in 1872 and saw active military service in the Sudan in 1882, held various staff appointments, and retired from the Army after thirty years' service. He then turned his attention to the study of medicine as a hobby. He qualified at Edinburgh in 1899 and soon after in Glasgow and Dublin. In 1904 he obtained honours in the Durham M.B., B.S., and in the following year he passed the M.R.C.P. Yet he never practised medicine except for serving on recruiting and pension assessment boards during the 1914–18 war. He lived at Falmouth and was interested in special treatment clinics, orphanages, and similar institutions, up to very recently. He will be missed by his many friends.

Universities and Colleges

UNIVERSITY OF OXFORD

In a Congregation held on Dec. 14, 1946, the following medical degrees were conferred:

B.M.—J. B. Louden, H. D. Leggatt, M. G. D. Davys, Alison M. Miles.

ROYAL COLLEGE OF SURGEONS IN IRELAND

An intensive postgraduate course in surgery will be conducted in Dublin from April 14 to June 12, and will consist of afternoon clinical sessions at the main teaching hospitals, with correlated demonstrations in the anatomy and pathology departments of the College. The fee for the course is £21 and, as numbers will be restricted, those intending to join should make early application to the Registrar of the College, Prof. W. N. Rae, D.Sc., St. Stephen's Green, Dublin, from whom detailed particulars can be obtained.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

Mr. Philip H. Mitchiner will deliver a lecture on "Surgery in Two Wars" in the Hall of the Faculty, 242, St. Vincent Street, Glasgow, on Wednesday, Jan. 29, at 4 p.m.

No. 1

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Jan. 4.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London) (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947 (a)	(b)	(c)	(d)	(e)	1946 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	61	8	32	1	—	53	4	34	3	2
Deaths		2	—				2	1		
Diphtheria	242	19	65	33	6	469	31	172	85	14
Deaths	4	—	2		—	12	1	4	—	—
Dysentery	65	2	17	—	—	285	32	38	2	—
Deaths					—					—
Encephalitis lethargica, acute	2	1	—	—	—	1	—	1	—	—
Deaths		—					1			
Erysipelas			40	13	4			35	9	7
Deaths		—					1			
Infective enteritis or diarrhoea under 2 years				38					17	
Deaths	76	9	7		1	66	7	6	18	—
Measles*	10,823	359	206	28	758	771	88	32	103	1
Deaths	10	—	2		2	6	—	—	1	—
Ophthalmia neonatorum	67	5	9	—	—	62	7	12	—	—
Deaths										
Paratyphoid fever	3	1	—	—	—	2	2	—	—	—
Deaths	—	—	—		—	—	—	—	—	—
Pneumonia, influenzal	1,264	76	40	5	5	1,165	99	36	9	9
Deaths (from influenza)†	36	5	12		—	123	15	17	—	2
Pneumonia, primary			385	48				432	27	
Deaths		82			19		79		21	9
Polio-encephalitis, acute	1	—				—	—			
Deaths		—					—			
Poliomyelitis, acute	9	2	1	20	—	13	—	—	2	—
Deaths		—					—			
Puerperal fever		4	15		—		2	14		—
Deaths										
Puerperal pyrexia‡	120	10	23	—	—	135	11	9	1	—
Deaths		—					—			
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,161	75	246	37	35	1,250	111	263	16	31
Deaths	—	—	—		—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Typhoid fever	5	—	2	4	—	3	—	2	5	1
Deaths	—	—	—		1	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths					—				—	—
Whooping-cough*	2,030	115	68	64	62	1,048	96	37	10	9
Deaths	17	2	3		—	14	2	—	—	—
Deaths (0–1 year)	612	82	86		19	483	68	49	51	14
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	6,820	1171	851		177	6,291	1055	742	263	149
Annual death rate (per 1,000 persons living)			18·7					16·8	16·9	
Live births	10,882	1770	1217		338	7,484	1195	898	408	254
Annual rate per 1,000 persons living			24·5					18·0	26·1	
Stillbirths	336	41	36			217	20	34		
Rate per 1,000 total births (including stillborn)			29					36		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* a large increase in the prevalence of infectious diseases was recorded during the week. There was a rise in the incidence of measles 3,755, whooping-cough 881, acute pneumonia 504, scarlet fever 218, and diphtheria 620.

The largest increases in the notifications of measles were in Lancashire 799, Warwickshire 464, Yorkshire West Riding 273, Cheshire 227, Middlesex 207, Staffordshire 171, Nottinghamshire 157, London 130, and Derbyshire 115. The increase in cases of whooping-cough was larger in the North, and especially in Lancashire 137, Staffordshire 65, Warwickshire 51, and Yorkshire West Riding 45. The only variations of any size in the local trends of diphtheria were increases in incidence in Essex 12 and Lancashire 10.

A fresh outbreak of dysentery was recorded in Gloucestershire, involving 12 persons; the only other important centre of infection was Lancashire 15.

Small increases in the incidence of scarlet fever were recorded in most areas of the country but no large local variations were reported. The chief increases in the notifications of acute pneumonia were Lancashire 70, Essex 45, and London 35.

In *Scotland* infections decreased in prevalence, in contrast to the experience of England and Wales. There were falls in the notifications of whooping-cough 78, scarlet fever 53, and measles 18; the only increase of any size was cerebrospinal fever 9, and this rise in incidence was confined to the south-eastern and western areas.

In *Eire* the chief change in the trends of infectious diseases was the decrease in measles, only 28 cases being notified.

In *Northern Ireland* a large increase occurred in the measles epidemic in Belfast C.B., notifications increasing from 325 to 758. An increase of 26 in the notifications of whooping-cough was also reported from this city.

Week Ending January 11

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,058, whooping-cough 1,928, diphtheria 232, measles 10,223, acute pneumonia 1,264, cerebrospinal fever 56, dysentery 87, acute poliomyelitis 14, paratyphoid 4, typhoid 4.

Medical News

The Cambridge University Medical Society is to celebrate its twenty-fifth anniversary by a silver jubilee ball to be held at Grosvenor House, Park Lane, W., on Thursday, March 27, when there will be dancing to Sydney Lipton's orchestra from 8 p.m. to 1 a.m.; a supper; and a cabaret. The cost of double tickets (strictly limited to 225) for life members is £3 13s. 6d. and to non-members £4 4s. Application forms may be obtained from the Ball Committee of the society at Trinity Hall, Cambridge.

A general meeting of the Medical Society for the Study of Venereal Diseases will be held at 11, Chandos Street, Cavendish Square, W., on Saturday, Jan. 25, at 2.30 p.m., when Prof. J. W. McLeod will give an address on "Smear and Cultural Diagnosis in Gonorrhoea."

A meeting of the Nutrition Panel of the Society of Chemical Industry will be held at the Chemical Society's rooms (Burlington House, Piccadilly, W.) on Wednesday, Jan. 29, at 6.30 p.m., when Prof. E. Capstick will present a paper on "The Nation's Milk Supply and its Best Use." A discussion will follow. Members of the Food Group are invited to attend.

The next meeting of the British Branch of the International League Against Epilepsy will be held at the National Hospital, Queen Square, London, W.C., on Friday, Jan. 31, at 10 a.m. Papers will be read and discussed in the morning and in the afternoon. Luncheon arrangements have been made with the Royal Hotel, Woburn Place, W.C.

The second International Congress of the International Academy of Legal and Social Medicine will be held at Brussels and Liége from June 25 to 28, and will be divided into five sections, legal medicine in its application to crime, social medicine, industrial medicine, medico-legal and social psychiatry, and scientific police. The official languages will be English and French. Those who wish to present reports or read papers should notify without delay the president of the Congress, Prof. Dr. M. De Laet, Faculté de Médecine, 7, Rue de la Gendarmerie, Brussels, or one of the general secretaries, Prof. Dr. P. Moureau (47, Rue Villette, Liége) or Prof. Dr. F. Thomas (23, Kluyskensstraat, Ghent).

Sir Ernest Cowell was last week invested by the French Ambassador with the insignia of the Légion d'Honneur and the Croix de Guerre, with palms, which was awarded in 1943.

A new quarterly publication entitled *The British Journal of Cancer* is to be published as the official organ of the British Empire Cancer Campaign. The annual subscription is £2 2s., and it is hoped that the first number will appear at the end of March. The journal is "for the publication of original communications concerning the causes, distribution, symptoms, pathology, and treatment of malignant disease and allied conditions. Papers upon clinical, bacteriological, biochemical, pharmacological, physiological, radiological, serological, and other subjects, therefore, would be acceptable when related to this subject." The publishers are Messrs. H. K. Lewis and Co., 136, Gower Street, London, W.C.1.

Since the Galton Laboratory Serum Unit (Medical Research Council), formerly at Cambridge, closed in May, 1946, Dr. R. R. Race, the former director, has moved to the Lister Institute, London, where he is in charge of the new Blood Group Research Unit of the Medical Research Council. Dr. A. E. Mourant, who formerly assisted Dr. Race, has become director of the new Blood Group Reference Laboratory of the Ministry of Health. This laboratory, which is part of the Ministry of Health Blood Transfusion Service, is also situated at the Lister Institute, and will provide grouping serum and investigate clinical blood group problems. The juxtaposition of these two laboratories will be of great mutual benefit and ensure the close association of the theoretical and practical sides of this subject. Hospitals and doctors requiring grouping serum should, in the first instance, apply to their local Regional Transfusion Centre, through which grouping serum will be issued.

Col. Lawrence Whitaker Harrison, C.B., D.S.O., M.B., Ch.B.Glas., F.R.C.P.Ed., has retired from the staff of the Ministry of Health, to which he has been adviser on venereal diseases since 1919. Col. Harrison has been associated with the control of venereal diseases in England and Wales for nearly half a century. In recognition of his work the American Social Hygiene Association awarded him the William Freeman Snow Medal for 1946. This annual award "for distinguished service to humanity" consists of a medal replica of the portrait plaque which was presented in 1937 to the distinguished American doctor, William Freeman Snow, to mark his fortieth year of service in the field of public health and social hygiene.

King Edward's Hospital Fund has received a further instalment of £75,000 from the Nuffield Trust for the Special Areas. In founding this Trust Lord Nuffield provided that any sums that might be available by way of repayment of loans or otherwise from his Trust for the Special Areas should pass to King Edward's Hospital Fund for London. A total sum of £575,000 has now been received, the first £250,000 of which was, at Lord Nuffield's request, allocated to Guy's Hospital.

After fifty years devoted to the advancement of medical publishing, including the issue of the *Medical Directory*, Mr. A. W. Churchill has decided to retire from the position of managing director of Messrs. J. and A. Churchill, Ltd. He will remain on the board as vice-chairman, so that the business, which was founded by his grandfather in 1825, will continue to benefit from his skilled help and advice. His place as managing director has been taken by Mr. J. Rivers, who joined the firm forty years ago.

The Medical Research Council have appointed Dr. S. T. Cowan (formerly of the University of Manchester) to succeed Dr. R. St. John Brooks as Director of the National Collection of Type Cultures of Micro-organisms. The Collection continues to be housed at the Elstree establishment of the Lister Institute of Preventive Medicine but will be moved to the Central Public Health Laboratory at Colindale as soon as accommodation there is available.

The Association of Scientific Workers, 15, Half Moon Street, London, W.1, of which Prof. P. M. S. Blackett, F.R.S., is president, has informed us that its membership is open to doctors and especially to laboratory workers. Its present members include chemists, engineers, agriculturists, and others.

In view of the increased supplies of pharmaceutical livers now available it has been decided to revoke the Liver Extract (Regulation of Use) Order, 1945, and the necessary Order has now been issued. The effect is that both injectible and oral preparations of liver may be freely manufactured and used in treatment.

Maj.-Gen. Sir Alexander Biggam, F.R.C.P., has been appointed Director of Postgraduate Studies in Medicine by the Postgraduate Board for Medicine in Edinburgh. The University Medical School and the Royal Colleges of Physicians and Surgeons of Edinburgh have co-operated to establish the Board.

Prof. Olympio Da Fonseca, of Brazil, who was head of the tropical diseases section of the recent Pasteur Commemoration conference in Paris, is on a short visit, arranged by the British Council, to this country, and will meet British colleagues and visit institutions concerned with tropical medicine in London and in Liverpool.

At the invitation of the Central Council of Physical Recreation and the British Council a party of French medical specialists has arrived in England to study British methods of physical recreation with a view to their possible adoption in France.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions, which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Effects of Tobacco

Q.—*Does tobacco smoke contain any injurious products, and has it any demonstrable carcinogenic activity? Is the pathogenesis of the following conditions related to the abuse of tobacco; retrobulbar neuritis, arterial disease including hypertension, cardiac disturbances, peptic ulceration, leukoplakia, and carcinoma of the lip, tongue, stomach, and bronchus? If so, how may heavy smokers avoid such unpleasant sequelae? Can tobacco stains be removed from the teeth without a visit to the dentist?*

A.—In addition to nicotine, cigarette smoke contains hydrocyanic acid, pyridines, ammonia, and carbon monoxide. The ammonia is responsible for some of the irritation of the respiratory passages which many confirmed smokers suffer; the pyridines are said to cause the gastro-intestinal distress of the neophyte. Tars are formed when tobacco is heated, but these are only weakly, if at all, carcinogenic when painted on the skin of mice. It is difficult to assess the extent to which tobacco can be blamed for the disorders mentioned. Publications on the subject often have a partisan flavour, and appear to be animated by the spirit which led the earlier Czars to transfix the smoker's nose with the stem of his pipe before beheading him. Tobacco amblyopia (retrobulbar neuritis) is traditionally said to occur in smokers of shag; it has been claimed that smoking causes a retinal vasoconstriction. Others hold that this type of visual disturbance is seen only in smokers who are also heavy drinkers, and that it is due to a deficiency of vitamin B_1. It has been stated that vision returns to normal when thiamine is given, even though the consumption of tobacco and alcohol is undiminished.

There is no evidence that hypertension is related to tobacco, but thrombo-angiitis obliterans does seem to be more common in heavy cigarette-smokers. It has been shown that smoking a cigarette is accompanied by a fall in the skin temperature of the extremities due to vasoconstriction. In some persons heavy smoking is associated with premature contractions, but there is no reason to suspect that it has any permanent effect on the heart. Peptic ulceration does not appear to be more common in heavy smokers, nor does smoking affect this disorder adversely. There is no evidence for believing that carcinoma of the stomach or bronchus can be attributed to tobacco. Many *ex cathedra* pronouncements impugn it as a cause of cancer of the lip and tongue; it must be regarded as an irritant in these situations and thus as a possible aetiological factor. The only way in which heavy smokers can avoid these dangers, many of them probably hypothetical, is by smoking less. Once the teeth have become discoloured there is no satisfactory alternative to a visit to the dentist.

Fluorine, Chlorine, and Milk

Q.—*Why is extra milk given to workers with fluorine? Is it likely to be of value to workers with chlorine?*

A.—There are two reasons for giving milk to workers with fluorine: (*a*) to take up acid in the gastric contents and therefore act as a demulcent against gastritis; (*b*) to prevent decalcification of the bones, by providing extra calcium. The first of these functions would apply to chlorine workers, but not the latter.

Delay in Delivery of Twins

Q.—*A multigravida aged 35 gave birth after five hours' labour to a healthy full-term male infant. I was called six hours later on account of the presence of a previously undiagnosed twin. The second twin, a healthy female infant, was delivered 106 hours later. Is so long an interval rare? What is the correct management of twin delivery?*

A.—An interval of several hours, days, or even weeks between the birth of the first and second twins was well known

in years gone by, but during this century, at any rate, it has become the established practice to intervene in cases of delay, and cases such as the one described have therefore become rare. Carson in 1880, according to DeLee, found that the interval between the two births if left to Nature varied from a few minutes up to 44 days. Any search for "a record," however, is unprofitable because the longer the interval the more likely is one to become involved in the old debatable problem of superfoetation and in reports of cases of doubtful authenticity. Moreover, cases in which one twin has been aborted early in pregnancy, the other remaining *in utero* to continue to develop to term, would need to be considered.

The management of twin delivery is now generally agreed. Immediately after the birth of the first baby abdominal examination should be carried out to make sure that the lie of the second child is longitudinal and that it is alive. If after an interval of twenty to thirty minutes the uterus remains inactive, then even in the absence of maternal and foetal distress the second bag of membranes should be ruptured artificially and the presenting part pressed into the brim of the pelvis by bimanual manipulation. Expulsive uterine contractions then follow quickly. Many prefer less conservative treatment and carry out vaginal examination and rupture of the membranes (first correcting the position of the baby) immediately after the first twin is born. Some even proceed at once to deliver the second child by forceps or by breech extraction after version. If this is done, however, the delivery should not be unduly hurried.

Although all went well in the case quoted in the question, delay in the delivery of the second baby does involve risk. The baby may die *in utero* from placental separation or prolapsed cord; so far as the mother is concerned there is always a possibility of haemorrhage, while some degree of intrauterine infection is almost inevitable.

Chronic Barbiturate Intoxication

Q.—*What risks are associated with continuous and high-dose medication with barbiturates?*

A.—A large number of symptoms and signs have been attributed to prolonged medication with barbiturates. These include vertigo, ataxia, nystagmus, tremor, motor paralyses, squint, diplopia, and facial palsy. Syndromes resembling lethargic encephalitis, bulbar palsy, and cerebral thrombosis have been reported. Psychic disturbances, such as increasing lethargy, mental hebetude, depressive states, mental deterioration, mania, and a condition resembling delirium tremens, have been noted. Finally, there are records of gastro-intestinal irritation, albuminuria, anaemia, and porphyrinuria. In spite of this wealth of possible symptoms, it is remarkable how rare instances of chronic barbiturate intoxication are. It may be, as some have held, that this is because they are seldom recognized.

Those drugs whose effect is of long duration are said to cause chronic poisoning more readily. Complete recovery usually follows withdrawal of the barbiturates for two to three weeks.

Auricular Fibrillation

Q.—*A woman aged 60 has suffered from auricular fibrillation for a number of years. This has been controlled by digitalis folia 1/2 to 1 gr. (32 to 65 mg.) administered once or twice daily as required. Recently she has shown intolerance to digitalis, and the fibrillation has returned with an apex beat of 140 and signs of congestive failure. Please advise as to further treatment.*

A.—In view of the fact that the patient has developed congestive failure she should be put to bed well propped up with pillows in the position of greatest comfort. Diet should be nutritious and small in bulk, with frequent feeds, and fluids should be restricted to 2 pints (1.14 litres) or even less daily, provided thirst is avoided. No added salt should be given. As digitalis folia has not been well tolerated, digoxin 0.25 mg. three or four times daily might be given for the rapid auricular fibrillation, the dose being decreased according to pulse rate and general response. A heart rate of approximately 70 should be aimed at but coupling avoided. Sleep is an important consideration, and for this morphine gr. 1/4 (16 mg.) hypodermically (or sublingually, using the hydrochloride or tartrate) should be given for a few nights provided there are no respiratory contraindications and the response is good. It may be found by trial and error that a larger dose is needed. For the bowels an enema should first be given followed by appropriate laxatives. Subsequent treatment will depend on progress and also on the precipitating causes of the failure.

If the response is good the pulse slows and the signs of congestive failure disappear. The patient should be kept in bed for about three weeks and then gradually allowed to get up and do more, the return to activity being carefully graduated according to the response to effort. Sleep should be ensured with phenobarbitone and the diet gradually increased, but all excessive consumption of food and unnecessary fluid or salt should be avoided. If the response on these lines is not satisfactory and signs of the congestive failure persist, then mercurial diuretics should be tried, each injection being preceded by ammonium chloride gr. 30 (2 g.) administered four hours before. Mersalyl 1 ml. intramuscularly might be given first, followed by 2 ml. every third or fourth day, so long as the injections are well tolerated and no contraindications arise. They should be continued with diminishing frequency until the oedema has completely disappeared.

Localized Slimming

Q.—*What methods are effective for reducing fat locally without reducing the weight in general? In particular, how may fat be dispersed from around the hips and buttocks?*

A.—It is doubtful whether any methods are effective in reducing fat locally. An electrical device used to be sold which massaged the areas mentioned; a simpler means was a roller with an irregular surface with which the patient applied violent friction where reduction was desired. Some masseurs claim that by means of vigorous—and painful—rolling, pinching, and rubbing they can disperse local deposits of fat. The theoretical basis of all these methods is claimed to be the actual disruption of fat cells. Their efficacy is doubtful, but it is likely that the energy expended in wielding the roller is to the patient's benefit.

Venepuncture by Non-medical Persons

Q.—*Apart from specially trained individuals, as, for example, in V.D. clinics, should venepuncture be carried out by non-medical personnel? Is it good hospital practice to allow a ward sister or senior nurse to take blood specimens for routine laboratory tests?*

A.—The question of venepuncture for withdrawal of a blood sample must be considered separately from that of venepuncture for injection of a drug. It is clear that the latter operation entails risks to the patient for which a medical practitioner must be responsible. In some V.D. clinics it is deputed to a trained orderly, although this appears inadvisable. In many hospitals specimens of blood are taken by nursing staff or by laboratory technicians; this arrangement is often expedient and there seems no reason to regard it as unethical. Inexpert venepuncture can be uncomfortable for the patient, but it is seldom, if ever, harmful. The common-sense answer depends on the dexterity of the performer, and many sisters and technicians possess this in high degree.

How Penicillin Acts

Q.—*How long does penicillin take to act? Is the problem one of therapy continued until all invading germs have had an opportunity of contact with an immediately lethal substance, or one of gradual extinction over several generations by a maintained adverse environment which has been experienced by all the bacteria from the beginning of treatment? Can an* in vitro *experiment yield a precise answer?*

A.—*In vitro* studies enables this question to be answered as follows. When susceptible and actively growing bacteria are exposed to a lethal concentration of penicillin growth ceases after a single generation and death rapidly ensues, sterilization being almost complete within a few hours under optimal conditions. It might be concluded from this that a single dose of penicillin should be capable of terminating an acute infection. That this is not usually so is due to at least three causes. Even in an apparently uniform actively growing bacterial population there is a very small minority of cells which are not killed, and bacteria which are not actively growing are not subject to this

rapid lethal action. There will thus be survivors of the initial attack which will multiply and continue the infection if treatment is not continued. Thirdly, there may be some part of the infected area not in close enough contact with the circulation for penicillin to reach it quickly and in adequate concentration. For these reasons total extermination of the invading bacteria by the action of penicillin alone is usually not to be expected; its influence must be maintained until the normal defence mechanism has been enabled to complete its work.

Prevention of Rust on Instruments

Q.—*Is there any substance which can be added to boiling water when sterilizing instruments which will prevent their rusting? Is it true that borax serves this purpose?*

A.—It is true that rusting will not occur in water containing borax in solution, even when instruments are immersed in it for weeks. This substance is therefore included in the formula of disinfectant solutions, of which the main constituent is formalin or *p*-chlormetacresol, used for the storage of sterile instruments. Two such formulae are:

℞	
Borax	1.5 g.
Formalin	2.5 ml.
Phenol	0.4 g.
Aq. dest.	ad 100 ml.
℞	
Borax	1.0 g.
p-chlormetacresol	0.2 g.
Spirit	0.6 ml.
Aq. dest.	ad 100 ml.

The addition of borax to water in which instruments are boiled is usually considered unnecessary, since there is no time for appreciable rusting to occur, unless the instruments are left in the sterilizer for some time after it has cooled. On the other hand, the addition of 2% sodium carbonate has the advantage that it enables boiling to destroy all kinds of bacteria, including spores, which may be unaffected by boiling in plain water.

Ergot and Ergotamine Poisoning

Q.—*What are the early and late toxic effects of ergot and of ergotamine?*

A.—A comprehensive account of the toxic symptoms produced by ergot and ergotamine is given by von Storch (*J. Amer. med. Ass.*, 1938, **111**, 293). The usual form of ergot poisoning is the gangrenous type, in which the premonitory symptoms are general lassitude, mental dullness, vague lumbar pains, cramp-like pains in the calves, and burning pains in the extremities followed by intense waves of heat and cold. The less common form is the convulsive type, usually associated with malnutrition, in which there are contractures of the muscles of the face, hands, and feet.

The first signs of poisoning due to ergotamine are nausea, vomiting, numbness, or tingling of the hands or feet, and muscle pains. The later signs are gangrene of the extremities, which usually remains dry. In a small proportion of patients there may also be insomnia and restlessness, substernal oppression, and vascular pain around the femoral or brachial vessels or in varicose veins.

INCOME TAX

All inquiries will receive an authoritative reply but only a selection can be published.

Practitioner's Expenses

J. F. inquires whether the cost of repairing a consulting room chair and of replacing a divan in his assistant's bedroom is allowable.

*** Yes—in both cases.

Cost of Assistant's "Living-in" Accommodation

G. L. asks how much can be allowed for such expenses.

*** In addition to the salary paid the principal can deduct sums expended to provide the board and lodging which the assistant is entitled to under the service agreement. No rule can be suggested for calculating the amount except that it should be a reasonable proportion of the general cost of maintaining the private establishment, plus any sums specifically expended for the assistant's benefit.

Letters and Notes

Nocturnal Diuresis

Dr. B. E. READ (Shanghai) writes: Nocturnal diuresis among internees in Shanghai was most pronounced. There is no evidence that I know of to support the theory that this is due to a rice diet, as suggested in Dr. C. Romer's letter (Aug. 3, p. 176). The Chinese on a rice diet do not micturate more freely than those in North China on a wheat diet, nor is a greater volume of urine excreted. I attribute the nocturnal diuresis observed to the nervous strain under which internees were living. My personal experience may be of interest. Living in one camp for 15 months in a dormitory of 67 men, I, in common with many of the others, was micturating five to six times a night. This entirely ceased when I moved to a second camp where at first I had a quiet private room. A month later I shared a larger room with a doctor and some time later I spent a year in a quiet billet with five other congenial people and had no recurrence of this trouble in an extreme form, though the diet was the same in both camps. Internees were generally unwilling to acknowledge any nervous strain. One man, who before internment was in the hands of the Gestapo for about one month, two weeks after his release said he was much better, having micturated the previous night only fourteen times.

Swallowed Kirby Grip

Dr. A. P. MACDONALD (Newark) writes: In view of Mr. A. M Desmond's communication (Dec. 28, 1946, p. 1012) the following case is considered worth recording. A child aged 2½ years was admitted to the Newark and District General Hospital on Dec. 19, 1946, with a history of having swallowed a Kirby grip two days previously. There was also a history that the child had been operated on successfully for pyloric stenosis at the age of 7 weeks. On admission, the child did not complain and nothing abnormal was discovered clinically. *X*-ray examination showed the hair grip to be lying in the stomach. The patient was given stodgy food and cotton-wool by mouth. Further *x*-ray examination on Dec. 23 showed the Kirby grip still in the stomach, and a small quantity of barium was given for confirmation. The child did not complain of any symptoms and it was decided to wait a little longer. After the barium the patient vomited three times, and the following day, one week after swallowing the foreign body, he vomited the Kirby grip back with a small quantity of barium. The grip measured 2 in. (5.1 cm.) in length.

Disclaimer

Drs. G. F. TRIPP, F. N. NEWNHAM, D. M. THOMSON, A. B. BAXTER, M. J. LINDSEY, T. O. MASON, G. R. FORD, C. F. KNIGHT (Dartford) write: We hereby disclaim all responsibility for recent Press reports on the medical service in Dartford, which were published without our knowledge or consent.

Correction

Dr. J. F. BROMLEY writes: As honorary secretary of the Faculty of Radiologists, I would like to draw attention to the fact that in your account in the *Journal* for Jan. 4 (p. 25) of the discussion on carcinoma of the stomach there is no reference to the part played by the Faculty of Radiologists. In fact the bodies taking part in the joint meetings were the British Institute of Radiology, the Faculty of Radiologists, and the R.S.M. Section of Radiology, and the chairman at the first meeting on Dec. 14 was our President, Dr. C. G. Teall. This was clearly stated in the notice of the meetings issued by all three societies.

A misprint occurred in the report of Sir Allen Daley's speech at the luncheon of the City of London Corporation Health Committee (*Journal*, Jan. 4, p. 24). Under the sub-heading "Hygienist and Surgeon," col. 1, line 21, the date 1885 should read 1855.

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